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PROCEEDINGS
OF THE
SOCIETY OF ANTIQUARIES OF SCOTLAND

SESSION
MDCCCCXIII.-MDCCCCXIV.



VOL. XLVIII.

EDINBURGH:

PRINTED FOR THE SOCIETY BY NEILL AND COMPANY LTD.

MDCCCCXIV.



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PROCEEDINGS

OF THE

Society of Antiquaries of Scotland

ONE HUNDRED AND THIRTY-FOURTH SESSION

1913-1914



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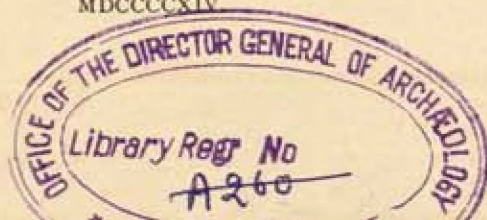
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VOL. XII.—FOURTH SERIES

Edinburgh

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TABLE OF CONTENTS.

	PAGES
Anniversary Meeting.	1-10
Account of some Slight Excavations at the Mote of Hawick. By ALEX- ANDER O. CURLE, <i>Director of the Museum</i> ,	18-24
Ruthven Barracks, in Badenoch. By Major W. MEYER-GRIFFITH, F.S.A. Scot., F.R.G.S., F.R. Hist. S.,	25-30
An Account of the Excavation of the Broch of Ayre, St Mary's Holm, Orkney. By A. SUTHERLAND GRAEME, F.S.A. Scot.,	31-51
An Oransay Shell-mound—A Scottish Pre-Neolithic Site. By A. HENDERSON BISHOP, F.S.A. Scot.,	52-108
Notice of the Excavation of a Cairn at Inverlael, Inverbroom, Ross- shire. By JAMES E. CREE, F.S.A. Scot.,	112-124
Report on the Excavation, in September 1913, of a Vitrified Fort at Rockeliffe, Dalbeattie, known as the Mote of Mark. By ALEXANDER O. CURLE, <i>Director of the National Museum of Antiquities</i> ,	125-168
The Orientation of Scottish Churches, Illustrated by an Analysis of some examples in Aberdeenshire and Banffshire." By F. C. EELES, F.R. Hist. S., F.S.A. Scot.,	169-183
Notes on Excavations at Dundargue Castle, Aberdeenshire, and on a Stone Circle and Grave at New Deer, Aberdeenshire. By Rev. W. BEVERIDGE, F.S.A. Scot.,	184-192
Notices of a Short Cist discovered in the Parish of Yester, East Lothian; of a Prehistoric Burial at Alva, Clackmannanshire; and of an Earth-House in Skye. By J. GRAHAM CALLANDER, F.S.A. Scot., <i>Secretary</i> ,	194-205

	PAGES
Note on Three Sculptured Monuments recently discovered in Garvoek Churchyard, Kincardineshire. By Rev. D. G. BARRON, F.S.A. Scot.,	206-209
The Churches and Churchyard Memorials of St Helens on The Lea and Cockburnspath. By ALAN REID, F.S.A. Scot.,	210-229
Account of the recent discovery of the Remains of David's Tower at Edinburgh Castle. By W. T. OLDRIVE, F.R.I.B.A., <i>Vice-President, Principal Architect for Scotland of H.M. Office of Works,</i>	230-270
Note upon Carn nan Bharraich, or Cairn of the Men of Barra, a Burial Mound of the Viking Time on the Island of Oronsay, Argyllshire, with an outline of the Political History of the Western Isles during the latter half of the Ninth Century. By SYMINGTON GRIEVE, F.S.A. Scot.,	272-291
On recent Scandinavian Grave-finds from the Island of Oronsay, and from Reay, Caithness, with Notes on the Development and Chronology of the Oval Brooch of the Viking Time. By JAMES CURLE, F.S.A. Scot.,	292-315
Account of the Excavation of Two Bronze-Age Cairns in the Parish of Foulden; and of the discovery of a Cist containing a Food-Vessel Urn, and Fragments of a Beaker, at Edington Mill, Chirnside, both in the County of Berwick. By J. HEWAT CRAW, F.S.A. Scot.,	316-333
Notices of the discovery of a Hoard of Rapier-shaped Blades of Bronze at Drumcoltran, in the Stewartry of Kirkcudbright, and of a Viking Sword at Torbeckhill, near Ecclefechan. By A. O. CURLE, <i>Director of the Museum,</i>	333-335
Notes on a Collection of Polishers and other Objects found on the Site of the Roman Fort at Newstead, Melrose. Exhibited to the Society by JOHN M. CORRIE, F.S.A. Scot.,	338-343
Notes on a Further Excavation of Ancient Dwellings at Skara, in the Parish of Sandwick, Orkney, made during August 1913. By W. BALFOUR STEWART, F.S.A. Scot. With Notes on the Remains found by Hon. Professor W. BOYD DAWKINS, F.R.S., D.Sc., F.S.A.,	344-355
An Edinburgh Trade Dispute during the Commonwealth. By CLARENDON HYDE CRESWELL, F.S.A. Scot.,	356-364
The "Stayt" of Crieff — A Bronze - Age Burial Site. By MUNGO HEADRICK,	365-369

TABLE OF CONTENTS.

vii

	PAGES
Account of the Excavation of two Hut-Circles of the Bronze Age, in the Parish of Muirkirk, Ayrshire. By J. G. A. BAIRD, F.S.A. Scot. With a Description of the Objects found, by A. O. CURLE, <i>Director of the Museum</i> ,	373-381
Account of the Excavation of the Edwardian Castle at Castledykes, Kirkcudbright. By J. ROBISON, F.S.A. Scot., Kirkcudbright. With Notes on Relics recovered, by A. O. CURLE, <i>Director of the Museum</i> ,	381-394
Notes on Three Hoards of Coins recently discovered in the South of Scotland. By GEORGE MACDONALD, M.A., LL.D., <i>Curator of Coins</i> ,	395-402
Notes on certain Standing Stones in Argyllshire. By Sheriff SHENNAN,	403-407
The Carved Stone Balls of Scotland: A New Theory as to their Use. By LUDOVIC MACLELLAN MANN, F.S.A. Scot.,	407-420
An Inventory of the Ancient Monuments remaining in the Island of Iona. By R. A. S. MACALISTER, M.A., Professor of Celtic Archaeology, University College, Dublin,	421-430
Dissent and Protest by Dr D. HAY FLEMING,	431-432
INDEX,	433

LIST OF ILLUSTRATIONS.

	PAGE
Mote of Hawick from the South-West,	19
Mote of Hawick, view from the South-South-East,	19
Mote of Hawick—Sections,	21
Sections of Rims of Cooking Pots,	22
Bone Needle,	23
Ground Plan of Ruthven Barracks, Badenoch,	26
Ruthven Barracks, Badenoch, in 1745,	27
View of Ruthven Barracks, from the East, 1913,	29
Plan of the Broch of Ayre, St Mary's Holm, Orkney,	32
View of Entrance from outside,	35
View in internal area, showing Partition Slabs,	35
Lamp of Stone, two Mortar-like Vessels, and Socket Stone,	39
Two Whorls and Grooved Sinker,	39
Cylinder of Bone, perforated,	40
Shaped Pieces of Bone and Antler, perforated,	41
Awl and Splinter of Bone, polished and pointed, and two long-handled Combs wanting the Teeth,	42
Vessel hollowed out of a Whale's Vertebra,	43
Two Bone Dice and their numbered faces,	43
Bone Pins and Fragments,	44
Fragments of Ornamented Pottery,	46
Fragments of Pottery belonging to one Vessel,	47
Sections of the Forms of the Lips of various Pottery Vessels,	48
Section of Strata in the Debris in the Passage I.,	51
Cnoc Sligeach, Plan and Contours,	57
Raised Beach and Mound to the West of Cnoc Sligeach,	59
Showing Position of Cnoc Sligeach and the Coast-line, from E. by S.,	59
Showing the Higher Ground to the West of Cnoc Sligeach,	60

	PAGE
Showing Position of the E.S.E. Occupation,	60
View from W.N.W., showing Sand-dunes at East End of Island,	62
Configuration of Cnoc Sligeach on the North,	62
Plan and Sections of Excavations through Shell-bed,	65
Section of Trench, showing Beach overlying Rock,	66
Portion of Beach at North End of Trench, viewed from above,	67
View of Top of Beach when cleared of overlying Shell-layer,	69
Shingle resting on Shell-layer,	70
View of Shingly Top of Beach,	71
View of Section of Beach, showing old Land Surface,	72
View of Centre of Trench, showing Sand resting on Rock,	73
View of Trench, showing Rock in Bottom,	74
Typical Section, 53 feet from Centre of Hill,	75
View of Trench, showing Slope of Shell-layer,	76
View showing Embedded Stones,	77
View showing converging of Shell Refuse,	78
View of Cross-section, 53 feet from Centre of Hill,	80
View of a Section of Post-hole, No. 2, in the Shell Refuse,	81
View of Section of Post-hole, No. 3,	82
View of Post-hole, No. 4,	83
Sections of Cuttings,	84
View of Trench,	86
View of Stones and Shell Refuse,	87
View of Shell-mound on Top of the Hill,	88
Sections of Sand-dunes on Beach,	89
View showing the Shore Dunes,	90
Implements and Flint-chips,	92
Implements,	93
Implements of Deer-horn and Stone,	94
Implements of Stone,	96
Harpoons of Bone,	97
Implements of Red-deer Antler,	98
Pins and Borers of Bone and Pieces of Pumice-stone,	99
Shells of the Pecten worn by use,	100
Cowrie Shells, doubly perforated,	101
Fish Spines and Scales and Perforated Shells,	103
Pointed Implement of Flint, found on the surface in Harray, Orkney,	110
View of the Cairn at Inverlael,	113
Ground Plan of Cairn at Inverlael,	114
Small Cist,	115
Ground Plan of Smaller Cist in the Cairn at Inverlael,	115
Objects found in the Cists,	118
Part of the Retaining Wall,	119

LIST OF ILLUSTRATIONS.

xi

	PAGE
The Central Cist,	121
The Mote of Mark, from the Shore of the Estuary,	125
The Mote of Mark, from the Landward Side,	126
View from the Mote, looking over the Estuary,	126
Plan and Sections of Summit of Mote of Mark,	129
Sectional View of Rampart,	130
Elevation of Wall, showing Vitrification,	131
Vitrification on Detached Blocks,	132
Vitrification, bearing Impression of Coarse Fabric,	133
View of Wall on North Side of Mote of Mark,	134
Sectional Plans of Structures in Mote of Mark,	135
Fragments of Clay Moulds from Mote of Mark,	142
Casts from each of the Fragments of Clay Moulds,	143
Fragments of Clay Moulds from Mote of Mark,	145
Casts from Clay Moulds from Mote of Mark,	146
Clay Moulds and other Objects from Mote of Mark,	148
Casts from Clay Moulds from Mote of Mark,	149
Fragments of Glass from Mote of Mark,	153
Portion of Crucible of Rectangular Form,	158
Portion of Crucible of Oblong Form,	158
Portion of Bowl-shaped Vessel,	159
Section of Rims of Domestic Pottery,	160
Pottery Lamp,	161
Pin-head of Bone with Bronze Mountings,	162
Plan of Dundargue Castle,	186
Objects found at Dundargue Castle,	189
Three Recumbent Slabs in Garvoek Churchyard,	208
The Church of St Helens from the South-East,	212
Base Mouldings of Chancel Arch, St Helens,	213
The Arched Recesses, St Helens,	215
A Mediæval Cross-Slab at St Helens, obverse and reverse,	216
Southern and Northern Splays of a Sculptured Coped Grave-Cover at St Helens,	217
Portion of a Hog-backed Grave-Cover at St Helens, obverse and reverse,	219
West Gable and Tower of the Church of Cockburnspath,	223
The "Deid-Bell" at Cockburnspath,	224
Arms of Hay of Errol,	226
A Blacksmith's Memorial at Cockburnspath,	228
A Resurrection Angel,	228
Key-Plan of the Castle, showing the position of David's Tower,	231
View of Edinburgh Castle from the South-East,	232
View of Edinburgh Castle from the East,	232
North-East Angle of Palace,	233

	PAGE
Canteen Coal-cellar until 1912,	233
Vaulted Recess with Shot-hole (after removal of Coal-cellar Floor),	234
Outer face of Original Wall of Tower where first exposed,	235
Original Entrance to earliest part of Tower,	237
Inner side of Original Entrance,	238
Outer Vault with Stalactites,	240
Outer Vault with Stalagmites rising from Debris,	240
Door on South Side on higher level. (Believed to be later),	241
Recess on West Side of Hall,	241
Doorway on North Side of Entrance Hall,	242
Mason's Marks on Stonework,	244
Vaulted Recess of Battery with Shot-hole,	244
Tapered Loop-hole of Battery,	245
View through Loop-hole, showing alignment with High Street,	245
Half-Moon Battery with the ancient Loop-hole exposed,	246
Recess on outer face of Half-Moon Battery, showing Original Loop-hole,	246
Fragments of Explosive Shell found outside Original Tower,	250
Solid Cannon Balls found outside Original Tower,	250
Fragments of Stone Shafts,	250
Small Ivory Toilette Bottle,	251
Tobacco Pipes,	251
Fragments of Wine Flagon,	252
Impression on Wine Flagon, with Coronet and Initial (probably of Earl Lennox),	252
Impression on Wine Flagon, with Ducal Coronet (probably of Duke of Queensberry),	252
Fragments of Earthenware Vessels,	253
Fragments of Glazed Earthenware Vessels,	254
Soldier's Iron Helmet,	255
Fragments of Moulded Stone, apparently from Mullions of Windows,	255
Moulded Stone Rybate, apparently from Oriel Window,	255
View showing new Well-head to ancient Well,	259
Triple-cylinder Pump found at bottom of the Well,	259
Bird's-eye View of Castle from Plan drawn shortly after Siege of 1573,	261
New Steps for access to the Vaults of David's Tower,	264
Steps as they now exist near site of "Constables' Tower,"	264
North-East face of Battery Wall, showing part rebuilt with Batter,	266
View at junction of part rebuilt with older Masonry,	266
Plan of David's Tower as it probably was originally,	267
Plan of David's Tower with the addition made later,	268
View of the South and East Elevations of David's Tower,	269
Showing position of Carn nan Bharraich, from Ordnance Map of Oronsay,	274
Sketch-Plan of Carn nan Bharraich, Oronsay,	277

LIST OF ILLUSTRATIONS.

xiii

	PAGE
From a Viking Grave in Oronsay,	293
Two Brooches from a Viking Grave in Reay,	296
From a Viking Grave in Reay, Caithness,	297
Small Cross of Iron,	298
Brooch from a Viking Grave in Unst, Shetland,	300
Brooches from Uppland and the Island of Öland, Sweden,	301
Brooch from Lousgård, Bornholm,	302
Brooch from Småland, Sweden,	303
Brooch from the Island of Björkö, Sweden,	304
Brooch from Öland, Sweden,	306
Brooch from Öland,	307
Brooch from Uppland, Sweden,	308
Brooch from the Island of Barra,	309
Brooch from Pierowall, Orkney,	310
Brooch from Ballinaby, Islay,	312
Brooch from Castletown, Caithness,	314
Showing positions of the Cairns,	317
Plan and Section of No. 1 Cairn at Foulken,	318
Urn from the North Cist in Cairn No. 1,	321
Urn from the South Cist in Cairn No. 1,	322
Axe-Hammer of Greenstone found in Cairn No. 1,	323
Flint Implements from the Cairn No. 1,	324
Plan and Section of Cairn No. 2,	326
View of Centre of Cairn No. 2 from the North-East,	327
Urn from the Edington Mill Cist, Chirnside,	331
Three Bronze Rapier-shaped Blades from Drumcoltran,	334
Viking Sword from Torbeckhill,	334
Urn from a Sand-pit at The Cuninghar, Tillicoultry,	337
Six Burnishers or Polishers of Quartz,	340
Sketch Ground-Plan of part of the Ancient Dwelling at Skara Brae, Skaill, Orkney,	345
Twig Rune cut on a loose stone at Skara, Skaill,	347
Stone Ball incised with Rectilinear Pattern,	347
Bone Scoop found at Skara,	348
Professor Boyd Dawkins examining the articles found, which are stored in a recess of the ancient building,	350
Stone Saw, 10 inches long, found at Skara,	353
Stone Mould from Skara, obverse and reverse,	351
Document signed by ten members of the Surgeon-Barber Craft in 1621, engaging that they would not haunt taverns,	363
Urn of Food-vessel Type found in a Cist at Broich, near Crieff,	365
Hut-circle No. 1, at Muirkirk,	374
Hut-circle No. 2, at Muirkirk,	375

	PAGE
Rectangular Hut, at Muirkirk,	377
Fragment of a Beaker found in Hut-circle No. 1,	380
Section and View of Fragment of Pottery from the Pit in Hut-circle No. 23,	380
Ground-Plan of the Edwardian Castle, Kirkeudbright,	388
Fragment of Pottery ornamented with a Brooch in relief,	392
Masks on Fragments of the Lips of two Earthenware Pitchers,	393
Small-toothed Comb of Bone,	393
Iron Pick for dressing Stones,	394
Object of Brass, imperfect,	394
Section of the Jug in which the Coins were contained,	396
Jug in which the Coins were contained,	399
Diagram showing positions of the Stones,	404
Diagram showing positions of the Stones and their distances from each other,	406
Scottish Ornamented Stone Balls,	410, 411

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THE RHIND LECTURESHIP.

*(Instituted 1874, in terms of a Bequest for its endowment by the late
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SESSION 1913-1914.

RHIND LECTURER IN ARCHAEOLOGY—

F. C. EELES.

L A W S

OF THE

SOCIETY OF ANTIQUARIES OF SCOTLAND,

INSTITUTED NOVEMBER 1780 AND
INCORPORATED BY ROYAL CHARTER 6TH MAY 1783.

(Revised and adopted November 30, 1901.)

1. The purpose of the Society shall be the promotion of ARCHÆOLOGY, especially as connected with the investigation of the ANTIQUITIES AND HISTORY OF SCOTLAND.
2. The Society shall consist of Fellows, Honorary Fellows, Corresponding Members, and Lady Associates.
3. Candidates for admission as Fellows must sign the Form of Application prescribed by the Council, and must be proposed by a Fellow and seconded by two Members of the Council. Admission shall be by ballot.
4. The Secretaries shall cause the names of the Candidates and of their Proposers to be inserted in the billet calling the Meeting at which they are to be balloted for. The Ballot may be taken for all the Candidates named in the billet at once; but if three or more black balls appear, the Chairman of the Meeting shall cause the Candidates to be balloted for singly. Any Candidate receiving less than two-thirds of the votes given shall not be admitted.

5. Honorary Fellows shall consist of persons eminent in Archæology, who must be recommended by the Council, and balloted for in the same way as Fellows; and they shall not be liable for any fees of admission or annual subscriptions. The number of Honorary Fellows shall not exceed twenty-five.

6. Corresponding Members must be recommended by the Council and balloted for in the same way as Fellows, and they shall not be liable for any fees of admission or annual subscriptions.

7. Ladies who have done valuable work in the field of Archæology may be admitted as Lady Associates. The number of Lady Associates shall not exceed twenty-five. They shall be proposed by the Council, and balloted for in the same way as Fellows, and shall not be liable for any fees of admission or annual subscriptions.

8. Before the name of any person is added to the List of Fellows, such person shall pay to the funds of the Society Two Guineas as an entrance fee and One Guinea for the current year's subscription, or may compound for the entrance fee and all annual subscriptions by the payment of Twenty Guineas at the time of admission. Fellows may compound for future annual subscriptions by a single payment of Fifteen Guineas after having paid five annual subscriptions; or of Ten Guineas after having paid ten annual subscriptions.

9. The subscription of One Guinea shall become due on the 30th November in each year for the year then commencing; and if any Fellow who has not compounded shall fail to pay the subscription for three successive years, due application having been made for payment, the Treasurer shall report the same to the Council, by whose authority the name of the defaulter may be erased from the List of Fellows.

10. Every Fellow not being in arrears of the annual subscription shall be entitled to receive the printed Proceedings of the Society from the date of election.

11. None but Fellows shall vote or hold any office in the Society.

12. Subject to the Laws and to the control of the Society in General Meetings, the affairs of the Society shall be managed by a Council elected and appointed as hereinafter set forth. Five Members of the Council shall be a quorum.

13. The Office-Bearers of the Society shall consist of a President, three Vice-Presidents, two Secretaries for general purposes, two Secretaries for Foreign Correspondence, a Treasurer, two Curators of the Museum, a Curator of Coins, and a Librarian. The President shall be elected for a period of five years, and the Vice-Presidents for a period of three years. One of the Vice-Presidents shall retire annually by rotation and shall not again be eligible for the same office until after the lapse of one year. All the other Office-Bearers shall be elected for one year and shall be eligible for re-election.

14. In accordance with the agreements subsisting between the Society and the Government, the Board of Manufactures (now the Board of Trustees) shall be represented on the Council by two of its Members (being Fellows of the Society) elected annually by the Society. The Treasury shall be represented on the Council by the King's and Lord Treasurer's Remembrancer (being a Fellow of the Society).

15. The Council shall consist of the Office-Bearers, the three representative Members above specified, and nine Fellows, elected by the Society.

16. Three of the nine elected Members of Council shall retire annually by rotation, and shall not again be eligible till after the lapse of one year. Vacancies among the elected Members of Council and Office-Bearers occurring by completion of term of office, by retirement on rotation, by resignation, by death or otherwise, shall be filled by election at the Annual General Meeting. The election shall be by Ballot, upon a list issued by the Council for that purpose to the Fellows at least fourteen days before the Meeting.

17. The Council may appoint committees or individuals to take charge of particular departments of the Society's business.

18. The Annual General Meeting of the Society shall take place on St Andrew's Day, the 30th of November, or on the following day if the 30th be a Sunday.

19. The Council shall have power to call Extraordinary General Meetings when they see cause.

20. The Ordinary Meetings of the Society shall be held on the second Monday of each month, from December to May inclusive.

21. Every proposal for altering the Laws must be made through the Council; and the Secretaries, on instructions from the Council, shall cause intimation thereof to be made to all the Fellows at least one month before the General Meeting at which it is to be determined on.

Form of Special Bequest.

I, A. B., do hereby leave and bequeath to the Society of Antiquaries of Scotland incorporated by Royal Charter, my collection of _____, and I direct that the same shall be delivered to the said Society on the receipt of the Secretary or Treasurer thereof.

General Form of Bequest.

I, A. B., do hereby leave and bequeath to the Society of Antiquaries of Scotland incorporated by Royal Charter, the sum of £ _____ sterling [to be used for the general purposes of the Society] [or, to be used for the special purpose, or object, of _____], and I direct that the said sum may be paid to the said Society on the receipt of the Treasurer for the time being.

LIST OF THE FELLOWS

OF THE

SOCIETY OF ANTIQUARIES OF SCOTLAND.

NOVEMBER 30, 1914.

PATRON.

HIS MAJESTY THE KING.

- | | |
|---|---|
| 1879. ABERCROMBY, The Hon. JOHN, LL.D.,
62 Palmerston Place,— <i>President</i> . | 1907. ANDERSON, JAMES LAWSON, Secre-
tary of the Commercial Bank of Scot-
land, 45 Northumberland Street. |
| 1896.*ADAM, FRANK, c/o The Straits Trad-
ing Co., Ltd., 11 Collyer Quay,
Singapore. | 1897. ANDERSON, Major JOHN HAMILTON,
2nd East Lancashire Regiment, c/o
Messrs Cox & Co., 16 Charing Cross,
London. |
| 1899. AGNEW, Sir ANDREW N., Bart.,
Lochnaw Castle, Strathraer. | 1911. ANDERSON, JOHN N., J.P., Solicitor,
Stornoway. |
| 1884. AGNEW, Sir STAIR, K.C.B., M.A., 22
Buckingham Terrace. | 1902.*ANDERSON, Major ROBERT DOUGLAS,
c/o The Manager, Lloyd's Bank,
Paignton, Devon. |
| 1892. AILSA, The Most Hon. The Marquess
of, Culzean Castle, Maybole. | 1871.*ANDERSON, Sir ROBERT ROWAND,
LL.D., H.R.S.A., Architect, 16 Rat-
land Square. |
| 1906. AITKEN, JOHN, LL.D., F.R.S., Arden-
lea, Falkirk. | 1887.*ANDERSON - BERRY, DAVID, M.D.,
LL.D., F.R.S.E., Versailles, 19
Stanhope Road, Highgate, Lon-
don, N. |
| 1905. ALEXANDER, R. S., Grant Lodge, 18
Lomond Road, Trinity. | 1913. ANGUS, Miss MARY, Immeriach,
Blackness Road, Dundee. |
| 1886. ALEXANDER, W. LINDSAY, Pinkieburn,
Musselburgh. | 1894. ANGUS, ROBERT, Ladykirk, Monkton,
Ayrshire. |
| 1909. ALISON, JAMES PEARSON, F.R.I.B.A.,
Ladylaw, Hawick. | 1910. ANNAN, J. CRAIG, Glenbank, Lenzie. |
| 1908. ALLINGHAM, HUGH, M.R.I.A., Pro-
vincial Bank House, Ballyshannon,
Co. Donegal, Ireland. | |
| 1884.*ANDERSON, ARCHIBALD, 30 Oxford
Square, London, W. | |

An asterisk (*) denotes Life Members who have compounded for their Annual Contributions.

1900. ANSTRUTHER, SIR RALPH W., Bart., of Balcaskie, Pittenweem.
1897. ANSTRUTHER-GRAY, WILLIAM, M.P., Major, Royal Horse Guards, Kilmany, Fife.
1910. ARMSTRONG, A. LESLIE, 14 Swaledale Road, Millhouses, Sheffield.
1912. ARMSTRONG, CLEMENT, Eskholm, Langholm.
1901. ARTHUR, ALEXANDER THOMSON, M.B., C.M., Blair Devenick, Cultra, Aberdeen.
1904. ARTHUR, SIR MATTHEW, Bart., of Carluig, Fullarton, Troon.
1910. ASHER, JOHN, 1 Muirhall Terrace, Perth.
1889. ATHOLL, His Grace The Duke of, K.T., Blair Castle, Blair Atholl.
- 1900.*BAIRD, JOHN G. ALEXANDER, of Wellwood, Muirkirk, Ayrshire.
1891. BAIRD, WILLIAM, J.P., Clydesdale Bank, Portobello.
1913. BAIRD, WILLIAM A., of Lennoxlove, Haddington.
1883. BALFOUR, CHARLES BARRINGTON, of Newton Don, Kelso.
1890. BANNERMAN, WILLIAM, M.A., M.D., West Park, 30 Polwarth Terrace.
1897. BARCLAY-ALLARDICK, ROBERT, M.A., Rosehill, Lostwithiel, Cornwall.
1909. BARCLAY, OSWALD, 17 Gayfield Square.
1897. BARNETT, Rev. T. R., 7 Corrennie Gardens.
1908. BARRETT, JAMES A. S., Librarian, University College, Dundee.
1910. BARRON, Rev. DOUGLAS GORDON, Dudottar Manse, Stonehaven.
1880. BARRON, JAMES, Editor of *Inverness Courier*, Inverness.
1909. BARTHOLOMEW, JOHN, of Glenorchard, Advocate, 56 India Street.
1907. BASKCOMB, Rev. C. G. H., B.D., Podymore Rectory, Taunton, Somerset.
- 1891.*BAYNE, THOMAS, 69 West Cumberland Street, Glasgow.
- 1884.*BEATON, Capt. ANGUS J., Bayfield, North Kessock, Inverness.
1910. BEATTIE, WILLIAM JOHN, Dineiddwg, Milgavie, Stirlingshire.
1903. BEDFORD, J. G. HAWKSLEY, Larach Bhaid, Killehran, Argyllshire.
1908. BELL, WALTER LEONARD, M.D., 123 London Road, Lowestoft, Suffolk.
1877. BELL, WILLIAM, 37 Melbourne Grove, Dulwich, London.
- 1890.*BEVERIDGE, ERSKINE, LL.D., St Leonard's Hill, Dunfermline.
- 1886.*BEVERIDGE, HENRY, Pitreavie House, Dunfermline.
1891. BEVERIDGE, JAMES, Sunnyside, Fossoway.
1913. BEVERIDGE, Rev. WILLIAM, U.F. Manse, New Deer, Aberdeenshire.
- 1895.*BILSLAND, Sir WILLIAM, Bart., LL.D., 28 Park Circus, Glasgow.
- 1877.*BILTON, LEWIS, W.S., 5 Abinger Gardens.
1891. BIRD, GEORGE, Woodlea, 109 Trinity Road.
1909. BISHOP, ANDREW HENDERSON, Thornton Hall, Lanarkshire.
1882. BLACK, WILLIAM GEORGE, LL.D., Rameyle, Downhill Gardens, Glasgow.
1907. BLACKIE, Rev. ERNEST MORELL, B.A., The Vicarage, Windsor.
1885. BLAIR, WALTER BIGGAR, LL.D., The Loan, Colinton.
1891. BLAIR, Rev. WILLIAM, M.A., D.D., Leighton Manse, Dunblane.
1879. BLANC, HIPPOLYTE J., R.S.A., Architect, 25 Rutland Square.
1909. BLUNDELL, Rev. ODO, O.S.B., The Abbey, Fort Augustus.
1885. BOMFAS, CHARLES S. M., 121 Westbourne Terrace, London.
- 1880.*BONAR, HORATIUS, W.S., 3 St Margaret's Road.
- 1904.*BONTRIN, JAMES SHELLEY, J.P., of Glencruitten, Oban.
1905. BOOKER, ROBERT P. LEE, Eton College, Windsor.
1903. BORTHWICK, HENRY, Borthwick Castle, Midlothian.
1893. BOYLE, The Hon. ROBERT E., Colonel, 95 Onslow Square, London.

1884. BOYNTON, THOMAS, Norman House, Bridlington.
- 1884.*BREADALBANE, The Most Hon. The Marquess of, K.G., Taymouth Castle, Aberfeldy.
1913. BRODIE, ROBERT HUME, South Park, Biggar, Lanarkshire.
1904. BROOK, EDWARD J., of Hoddum Castle, Ecclefechan.
1908. BROOK, WILLIAM, 87 George Street.
1908. BROTCHE, THEODORE C. F., *Evening Times*, 65 Buchanan Street, Glasgow.
- 1906.*BROWN, ADAM, Netherby, Gala-shiels.
1910. BROWN, ADAM THORBURN, Torquhan, Stow.
1902. BROWN, CHARLES, Dundas Lodge, Kerse, Falkirk.
1887. BROWN, GEORGE, 2 Spottiswoode Street.
1884. BROWN, G. BALDWIN, M.A., Professor of Fine Art, University of Edinburgh, 25 Coates Gardens, — *Foreign Secretary*.
1910. BROWN, JOHN ANTHUR, Roseland, Kilmaurs, Ayrshire.
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1902. BROWN, P. HUME, M.A., LL.D., Fraser Professor of Ancient (Scottish) History and Paleography, University of Edinburgh; Historiographer for Scotland; 20 Corrennie Gardens.
1897. BROWN, RICHARD, C.A., 22 Chester Street.
1882. BROWNE, GEORGE WASHINGTON, R.S.A., Architect, 24 Charlotte Square.
1882. BRUCE, JAMES, W.S., 59 Great King Street.
1893. BRUCE, JOHN, Inverallan, Helensburgh.
1907. BRUCE, Mrs MARY DALZIEL, of Sum-burgh, Shetland.
1912. BRUCE, VINCENT CONNELL, B.A. Oxon., of Longside and Inverquhomery, 3 Ainslie Place.
1908. BRYCE, PETER ROSS, Searcher of Records, 1 Lady Road.
1902. BRYCE, THOMAS H., M.A., M.D., Professor of Anatomy, No. 2 The University, Glasgow, — *Curator of the Museum*.
1889. BRYCE, WILLIAM MOIR, 11 Blackford Road.
1901. BUCCLEUCH AND QUEENSBERRY, His Grace The Duke of, Dalkeith House, Midlothian.
- 1910.*BUCHANAN, FRANCIS C., Clarinish, Row, Dumbartonshire.
1905. BURGESS, FRANCIS, Secretary of the Church Crafts League, 3 Kelfield Gardens, North Kensington, London, W.
- 1887.*BURGESS, PETER, Craven Estates Office, Coventry.
1882. BURNET, Sir JOHN JAMES, LL.D., R.S.A., Architect, 18 University Avenue, Hillhead, Glasgow.
1892. BURNETT, Rev. J. B., B.D., The Manse, Fetteresso, Stonehaven.
1911. BURNETT, Rev. WILLIAM, B.D., Restalrig Manse, Lisimore Crescent.
1897. BURN - MURDOCH, W. G., Arthur Lodge, 60 Dalkeith Road.
1887. BURNS, Rev. THOMAS, D.D., Croston Lodge, Chalmers Crescent.
- 1901.*BUTE, The Most Hon. The Marquess of, Mount Stuart, Rothesay.
1901. BUTLER, C. M'ARTHUR, Secretary of the Society of Architects, 28 Bedford Square, London.
1913. BUTTI, JAMES A., 7 Queen Street.
1903. CADELL, HENRY M., B.Sc., F.R.S.E., Grange, Linlithgow.
- 1896.*CADENHEAD, JAMES, A.R.S.A., R.S.W., 15 Inverleith Terrace.
1898. CALLANDER, JOHN GRAHAM, 15 Queen Street, — *Secretary*.
1908. CAMERON, Rev. ALLAN T., M.A., St Augustine's Vicarage, 301 Victoria Park Road, S. Hackney, London, N.E.
1910. CAMERON, D. Y., A.R.A., LL.D., Dun Eaglais, Kippen.
1887. CAMERON, J. A., M.D., Firhall, Nairn.
1905. CAMERON-SWAN, DONALD, F.R.P.S., 78 Park Lane, Croydon, Surrey.

1899. CAMPBELL, ARCHIBALD, Park Lodge, 62 Albert Drive, Pollokshields, Glasgow.
1906. CAMPBELL, DONALD GRAHAM, M.B., C.M., Auchincellan, Elgin.
1886. CAMPBELL, Sir DUNCAN ALEXANDER DUNDAS, Bart., O.V.O., of Barcaldine and Glenure, 16 Ridgeway Place, Wimbledon.
1909. CAMPBELL, Mrs M. J. C. BURNLEY, of Ormidale, Colintonvale.
- 1882.*CAMPBELL, PATRICK W., W.S., 25 Moray Place.
1901. CARPRAE, GEORGE, 77 George Street.
1906. CARMICHAEL, EVELYN G. M., Barrister-at-Law, Lilleshall Old Hall, Newport, Salop.
1891. CARMICHAEL, JAMES, of Arthurburn, Ardler, Meigle.
- 1888.*CARMICHAEL, The Right Hon. BARON, of Skirling, G.C.L.E., K.C.M.G., Governor of Madras.
- 1901.*CARNEGIE, ANDREW, LL.D., of Skibo, Skibo Castle, Dornoch.
- 1871.*CARTWRIGHT, THOMAS LESLIE MELVILLE, Melville House, Colleslie, Fife.
1896. CAW, JAMES L., Director of the National Galleries of Scotland, 14 Cluny Place.
1890. CHALMERS, P. MACGREGOR, Architect, 95 Bath Street, Glasgow.
1906. CHARTERIS, A. H., M.A., LL.B., 4 Queen Margaret Cresc., Glasgow.
1895. CHISHOLM, A. W., 7 Claremont Crescent.
1903. CHISHOLM, EDWARD A., 42 Great King Street.
1901. CHRISTIE, Miss ELLA R., Cowden, Dollar.
1909. CHRISTIE, WILLIAM, of Lochdochart, Braemar House, 3 Whitehouse Terrace.
1910. CHRISTINSON, JAMES, Librarian, Public Library, Montrose.
1902. CLARK, ARCHIBALD BROWN, M.A., Professor of Political Economy, University of Manitoba, Winnipeg, Canada.
1889. CLARK, DAVID R., M.A., 8 Park Drive West, Glasgow.
1905. CLARK, JAMES, C.B., K.C., 10 Drumshough Gardens.
1913. CLARK, JOHN R. W., Westbank, Arbroath.
1896. CLARK, THOMAS BENNET, C.A., Newmillis House, Balerno.
1908. CLAY, ALEXANDER THOMSON, W.S., 18 South Leamouth Gardens.
1903. CLEPHAN, ROBERT COLTMAN, Marine House, Tyndemouth.
1908. CLINCH, GEORGE, F.G.S., 3 Meadowcroft, Sutton, Surrey.
1880. CLOUSTON, Sir THOMAS S., M.D., LL.D., 26 Heriot Row.
1906. CLYDE, JAMES AVON, K.C., LL.D., M.P., 27 Mornay Place.
1891. COATS, Sir THOMAS GLEN, Bart., of Ferguslie, Paisley.
- 1905.*COCHRANE, KENNETH, Newfaan, Galashiels.
1914. COCHRANE, The Hon. THOMAS, Crawford Priory, Springfield, Fife.
- 1901.*COCHRAN-PATRICK, Mrs ELLA A. K., Woodside, Beith.
- 1898.*COCHRAN-PATRICK, NEIL J. KENNEDY, of Woodside, Advocate, 34 Heriot Row.
1908. COLLINS, Major HUGH BROWN, of Auchinbothie, Kilmaleolus.
1909. COMRIE, JOHN D., M.A., B.Sc., M.D., F.R.C.P.E., Lecturer on the History of Medicine, University of Edinburgh, 25 Manor Place.
1911. CORRIE, JOHN, Burnbank, Moniaive, Dumfriesshire.
1913. CORRIE, JOHN M., Arnoth Terrace, Newton St Boswells.
1901. COURTNEY, CHARLES J., Librarian, Minet Public Library, Knatchbull Road, London, S.E.
1891. COUTTS, Rev. ALFRED, B.D., 5 Queensferry Terrace.
- 1879.*COWAN, Rev. CHARLES J., B.D., Morebattle, Kelso.
1887. COWAN, JOHN, W.S., St Roque, Grange Loan.
1888. COWAN, WILLIAM, 47 Braid Avenue.
- 1893.*COX, ALFRED W., Glendoick, Glencarse, Perthshire.

1899. COX, BENJAMIN C., Gilston, Largo-ward, Fife.
- 1901.*COX, DOUGLAS H. (no address).
1882. CRAIRIE, GEORGE, 8 Rothesay Terrace.
1892. CRAIG-BROWN, T., Woodbarn, Selkirk.
1900. CRAN, JOHN, Backhill House, Musselburgh.
1911. CRAW, JAMES HEWAT, West Foulden, Berwick-on-Tweed.
1903. CRAWFORD, DONALD, K.C., LL.D., Sheriff of Aberdeen, Kincardine and Banff, 35 Chester Street.
1909. CRAWFORD, ROBERT, Ochilton, 36 Hamilton Drive, Maxwell Park, Glasgow.
1908. CRAWFORD, Rev. THOMAS, B.D., of Orchill, Braco, Perthshire.
- 1901.*CRAWFORD, The Right Hon. The Earl of, Balcarras, Colinsburgh, Fife.
1905. CREE, JAMES EDWARD, Tusculum, North Berwick.
1913. CRESWELL, CLARENDON H., (Library), Royal College of Surgeons.
1907. CRICHTON, DOUGLAS, 3 New Square, Lincoln's Inn, London.
1886. CROSS, ROBERT, 13 Moray Place.
1907. CUMMING, ALEXANDER D., Headmaster, Public School, Callander.
1910. CUMMING, W. SKEOCH, The Dovecot, Dovecot Road, Corstorphine.
1891. CUNNINGHAM, JAMES HENRY, C.E., 2 Ravelston Place.
1893. CUNNINGTON, B. HOWARD, Devizes.
1893. CURLE, ALEXANDER O., 8 South Leamouth Gardens, — *Director of Museum*.
- 1889.*CURLE, JAMES, Priorwood, Melrose, — *Curator of Museum*.
- 1886.*CURRIE, JAMES, Larkfield, Wardie Road.
- 1879.*CURSITER, JAMES WALLIS, Albert St., Kirkwall.
1879. DALGLEISH, J. J., Brankston Grange, Stirling.
1911. DALLAS, JAMES (no address).
1893. DALRYMPLE, The Right Hon. Sir CHARLES, Bart., LL.D., Newhailes, Musselburgh.
1883. DALRYMPLE, The Hon. HEW HAMILTON, Lochinch, Wigtownshire.
- 1886.*DAVIDSON, JAMES, Solicitor, Kirriemuir.
1910. DAVIDSON, JAMES, Summerville, Dumfries.
1909. DAVIDSON, JOHN MAHR, Braedale, Lanark.
1901. DEWAR, T. W., of Harperfield, Sandilands, Lanarkshire.
1901. DICK, Rev. JAMES, Blackwood, Auld-girth, Dumfriesshire.
1898. DICK, Rev. ROBERT, Colinsburgh, Fife.
1906. DICKSON, LEONARD WALTER, C.A., 45 Manor Place.
1895. DICKSON, WILLIAM K., LL.D., Advocate, 8 Gloucester Place, — *Librarian*.
- 1882.*DICKSON, WILLIAM TRAUQUAIR, W.S., 11 Hill Street.
- 1886.*DIXON, JOHN HENRY, Dundarach, Pitlochry.
1910. DIXON, RONALD AUDLEY MARTINEAU, F.G.S., F.R.G.S., 46 Marlborough Avenue, Hull.
1899. DOBIE, WILLIAM FRASER, 47 Grange Road.
1895. DONALDSON, HENRY T., British Linen Bank, Nairn.
1905. DONALDSON, HUGH (no address).
- 1867.*DONALDSON, Sir JAMES, D.D., LL.D., Principal of the University of St Andrews.
1910. DONN, ROBERT, Blenheim, American-muir Road, Downfield, Dundee.
1908. DOUGLAS-CAMPBELL, Col. MONTAGUE, D.S.O., 34 Abercromby Place.
- 1861.*DOUGLAS, DAVID, 9 Castle Street.
1895. DOUGLAS, Sir GEORGE, Bart., Springwood Park, Kelso.
1911. DOUGLAS, JOHN, 6 St Mary's Grove, Barnes Common, London, S.W.
1913. DOUGLAS, LOUDON M., F.R.S.E., 3 Lauder Road.
- 1881.*DOUGLAS, W. D. ROBINSON, Orchardton, Castle-Douglas.
- 1912.*DRUMMOND, HUGH W., Hawthornden, Lasswade.
- 1900.*DRUMMOND, JAMES W., Westerlands, Stirling.

- 1896.***DRUMMOND, ROBERT, C.E.**, Fairfield, Paisley.
1878. **DRUMMOND, WILLIAM**, 4 Learmonth Terrace.
- 1895.***DRUMMOND-MORAY, Capt. W. H.**, of Abercraibney, Crieff.
1891. **DUFF, THOMAS GORDON**, of Drumnair, Keith.
1902. **DUFF-DUNBAR, Mrs L.**, of Ackergill, Ackergill Tower, Calthness.
1909. **DUNCAN, Rev. DAVID**, Minister of St Thomas's Parish, Anderslas, Girard Avenue, Parkhead, Glasgow.
1909. **DUNCAN, JAMES**, Librarian, 22 Airlie Place, Dundee.
1910. **DUNCAN, JAMES A.**, F.R.G.S., Logie-Aston, Bridge of Allan.
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1909. **EDINGTON, GEORGE HENRY, M.D.**, 20 Woodside Place, Glasgow.
- 1892.***EDWARDS, JOHN**, 4 Great Western Terrace, Glasgow.
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- 1855.***ELDER, WILLIAM NICOL, M.D.**, 6 Torphichen Street.
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1913. **ELLIOT, Lieut.-Col. The Hon. FITZ-WILLIAM**, 16 Royal Terrace.
1889. **ERSKINE, DAVID C. E., M.P.**, of Linlathen, Linlathen House, Broughty Ferry.
1912. **EWART, EDWARD, M.D., Ch.B.**, Broadgates, Gullane.
1909. **EWEN-WATSON, GEORGE J., W.S.**, Estate Office, Fort-William.
1912. **FAIRWEATHER, WALLACE**, of Mearns Castle, Renfrewshire.
- 1880.***FAULDS, A. WILSON**, Knockbuckle House, Beith.
1904. **FERGUSON, JAMES ARCHIBALD**, Banker, Norwood, 78 Inverleith Place.
1890. **FERGUSON, JOHN, M.A., LL.D.**, Professor of Chemistry, Glasgow University, 13 Newton Place, Glasgow.
1892. **FERGUSON, JOHN**, Writer, Duns.
1875. **FERGUSON, Sir JAMES R., Bart.**, of Spitalhaugh, West Linton.
- 1899.***FINDLAY, JAMES LESLIE**, Architect, 10 Eton Terrace.
- 1892.***FINDLAY, JOHN R.**, 27 Drumshough Gardens.
1905. **FINDLAY, ROBERT DE CARDONNEL**, 19 Grosvenor Street.
1911. **FINLAY, JOHN**, Dolphinton House, Dolphinton.
1885. **FLEMING, D. HAY, LL.D.**, 4 Chamberlain Road.
1909. **FLEMING, Rev. D. W. B.**, Culross Park, Culross.
1895. **FLEMING, JAMES STARK**, Inverlemy House, Callander.
1908. **FLEMING, JOHN**, 9 Woodside Crescent, Glasgow.
1908. **FLETCHER, EDWIN W.**, Ivydene Hendham Road, Upper Tooting, London, S.W.
- 1875.***FOOTE, ALEXANDER** (no address).
1909. **FOOTE, ALEXANDER ALLAN**, Architect, 3 Parliament Square.
1911. **FORSYTH, WILLIAM, F.R.C.S. Ed.**, Little Wittenham, Abingdon, Berks.
1909. **FORTUNE, GEORGE**, Architect, Kilmeny House, Duns.
1906. **FOULKES-ROBERTS, ARTHUR**, Solicitor, 47 Vale Street, Denbigh, N. Wales.
1883. **FOX, CHARLES HENRY, M.D.**, 35 Heriot Row.
1911. **FRASER, ALEXANDER**, Kinross Lodge, Woodlawn Avenue, Toronto, Canada.
1902. **FRASER, EDWARD D.**, c/o J. & T. Scott, 10 George Street.
1898. **FRASER, HUGH ERNEST, M.A., M.D.**, Medical Superintendent, Royal Infirmary, Dundee.
1913. **FRASER, PATRICK NEILL**, Rockville, Murrayfield.

1912. GALLOWAY, MRS LINDSAY, Kilchrist, Campbeltown.
1890. GARDEN, FARQUHARSON T., 4 Rubislaw Terrace, Aberdeen.
1908. GARDNER, ALEXANDER, Publisher, Dunroed, Paisley.
- 1891.*GARSON, WILLIAM, W.S., 60 Palmerston Place.
- 1891.*GARSTIN, JOHN RIBTON, D.L., M.A., Braganstown, Castlebellingham, Co. Louth, Ireland.
1911. GAWTHORP, WALTER E., 16 Long Acre, London.
1909. GEMMELL, WILLIAM, M.B., C.M., Avoca, Victoria Drive, Scotstounhill, Glasgow.
1912. GIBSON, JOHN, Agent, British Linen Bank, Dundee.
1903. GIBSON, WILLIAM, M.A., 44 Piazza Farnese, Rome.
1896. GILLIES, PATRICK HUNTER, M.D., Dunmore House, Easdale, Argyllshire.
1912. GILMOUR, ALLAN, yr., of Roskeen, Woodbank, Alexandria, Dumbartonshire.
- 1912.*GLADSTONE, HUGH S., M.A., F.R.S.E., Capenoch, Thornhill, Dumfriesshire.
1901. GLADSTONE, Sir JOHN R., Bart., of Fasque, Laurencekirk.
- 1913.*GLENCONNER, The Right Hon. Lord, The Glen, Innerleithen.
1914. GOBY, PAUL, 5 boulevard Victor Hugo, Grasse, Alpes Maritimes, France.
1909. GORDON, JAMES TENNANT, Chief Constable of Fife and Kinross, Bellbrise, Cupar, Fife.
1901. GORDON, The Hon. JOHN E., M.P., 44 Albert Court, Prince's Gate, London.
1883. GORDON-GILMOUR, Lt.-Col. ROBERT, C.B., D.S.O., of Craigmillar, The Inch, Liberton.
- 1869.*GOUDIE, GILBERT, 31 Great King Street.
1911. GOURLAY, CHARLES, B.Sc., A.R.I.E.A., Professor of Architecture in the Royal Technical College, 30 Hamilton Drive, Hillhead, Glasgow.
1913. GRAHAM, ANGUS, Skipness, Argyll.
1909. GRAHAM, JAMES NOBLE, of Carlin and Stonebyres, Carluke.
1910. GRAHAM, WILLIAM, Manager, Union Bank of Scotland, 7 Bruntsfield Crescent.
1888. GRANT, F. J., W.S., Lyon Office, H.M. General Register House.
1905. GRANT, JAMES, L.R.C.P. and S., Seafield House, Stromness.
1910. GRANT, JAMES, M.A., LL.B., Town Clerk of Banff, 23 Castle Street, Banff.
1911. GRAY, GEORGE, Town Clerk of Rutherglen, Threshrig, Rutherglen.
1904. GRAY, Rev. JOHN, St Peter's, Falcon Avenue, Morningside Road.
1891. GREEN, CHARLES E., of Gracemount, Liberton, Midlothian.
1887. GREIG, ANDREW, C.E., 10 Cluny Gardens.
1910. GRIERSON, Sir PHILIP J. HAMILTON, Advocate, Solicitor for Scotland to the Board of Inland Revenue, 7 Palmerston Place.
1880. GRIEVE, SYMINGTON, 11 Lauder Road.
- 1871.*GRUB, Very Rev. GEORGE, Dunmore Parsonage, Larbert.
1909. GRUNDY-NEWMAN, S. A., F.R. Hist. Soc., Littleton Place, Walsall.
1909. GUILD, JAMES, B.A. (Lond.), L.C.P., 36 Hillend Road, Arbroath.
1910. GUNN, GEORGE, F.E.I.S., Craigmarten, Wick.
1911. GUNSON, Rev. ERNEST SHERWOOD, M.A., Minister of St David's Church, 9 Alisa Drive, Langside, Glasgow.
- 1907.*GUTHRIE, CHARLES, W.S., 13 Northumberland Street.
- 1884.*GUTHRIE, The Hon. Lord, LL.D., 13 Royal Circus, — *Vice-President*.
1904. GUTHRIE, Sir JAMES, LL.D., President of the Royal Scottish Academy, Rowmore, Row, Dumbartonshire.
1905. GUTHRIE, THOMAS MAULE, Solicitor, Brechin.
1907. GUY, JOHN C., Advocate, Sheriff-Substitute of the Lothians and Peeblesshire, 7 Darnaway Street.

- 1861.*HADDINGTON, The Right Hon. The Earl of, K.T., Tynninghams, Preston-kirk.
1910. HALLIDAY, W., F.S.L.A., M.A., F.S. Litt., The Bungalow, Hegham-on-the-hill, Nuneaton.
- 1901.*HAMILTON OF DALZELL, The Right Hon. Lord, K.T., C.V.O., Dalzell, Motherwell.
1898. HAMPTON, Rev. DAVID MACHARDY, The Manse, Culross.
1911. HANNAN, Rev. THOMAS, M.A., Rector of St Peter's Church, Trafalgar Lodge, Musselburgh.
1912. HANNAY, ROBERT KEHN, Curator of the Historical Department, H.M. General Register House, 14 Inverleith Terrace.
- 1903.*HARRIS, WALTER B., Tangier, Morocco.
1913. HARRISON, G. A., Warrander, Murrayfield Avenue.
1887. HARRISON, JOHN, Rockville, Napier Road.
1913. HAROLD, Miss ELISABETH SEARS, Westover, Virginia, U.S.A.
1886. HART, GEORGE, Deanside, Craw Road, Paisley.
1905. HARVEY, WILLIAM, 4 Gowrie Street, Dundee.
1906. HATCH, Rev. J. EDGAR, M.A., St Paul's Vicarage, Southampton.
1874. HAY, JAMES T., Blackhall Castle, Banchoory.
- 1865.*HAY, ROBERT J. A., c/o Messrs Dundas & Wilson, 16 St Andrew Square.
1895. HEITON, ANDREW GRANGER, Architect, Perth.
- 1889.*HENDERSON, JAMES STEWART, 1 Pond Street, Hampstead, London, N.W.
1907. HENDERSON, JOHN ALEXANDER, Ayon-dale, Cults, Aberdeen.
1909. HENDERSON, ROBERT, C.E., 2 St Andrew Square.
1891. HERRIES, Major WILLIAM D., yr. of Spottis, Dalbeattie.
1908. HEWAT, ARCHIBALD, F.F.A., F.R.S.E., 13 Eton Terrace.
1897. HEWAT, Rev. KIRKWOOD, M.A., North Manse, Prestwick, Ayrshire.
1887. HEWISON, Rev. J. KING, M.A., D.D., The Manse, Rothsay.
1896. HIGGIN, J. WALTER, Casablanca, King's Road, Colwyn Bay.
- 1909.*HOLMS, JOHN A., Stockbroker, Sandyford, Paisley.
1914. HOME, GORDON C., 43 Gloucester Street, Warwick Square, London, S.W.
1904. HORTON - SMITH, LIONEL GRAHAM HORTON, M.A., Barrister-at-Law, 58 Clarendon Road, Holland Park, London, W.
1901. HOULDSWORTH, Sir WILLIAM HENRY, Bart., Goodham, Kilmarnock.
1892. HOUSTON, Rev. A. McNEILL, M.A., B.D., The Manse, Auchterderran, Cardenden, Fife.
- 1889.*HOWDEN, CHARLES R. A., Advocate, 27 Drummond Place.
1886. HOWDEN, JOHN M., C.A., 11 Eton Terrace.
1910. HUNTER, ANDREW, 48 Garscube Terrace, Murrayfield.
1909. HUNTER, DOUGLAS GORDON, 88 Warrander Park Road.
1891. HUNTER, Rev. JAMES, Fala Manse, Blackshiels.
1898. HUNTER, Sir THOMAS, LL.D., W.S., Town Clerk of Edinburgh, Inver-arbour, 54 Inverleith Place.
1882. HUTCHESON, ALEXANDER, Architect, Herschel House, Broughty Ferry.
1895. HUTCHESON, JAMES T., of Moreland, 12 Douglas Crescent.
1909. HYDE, The Hon. JOHN, F.R.G.S., etc., Lanier Heights, Washington, D.C., U.S.A.
1912. HYSLOP, ROBERT, 5 Belle Vue Crescent, Sunderland.
1908. INGLIS, ALAN, Art Master, Arbroath High School, Beaufort, Montrose Road, Arbroath.
1891. INGLIS, ALEXANDER WOOD, 30 Abercromby Place.

1904. INGLIS, FRANCIS CAIRD, Rock House, Calton Hill.
- 1911.*INGLIS, HARRY R. G., 10 Dick Place.
- 1906.*INGLIS, JOHN A., Advocate, 13 Randolph Crescent.
1913. JACKSON, GEORGE ERSKINE, W.S., Kirkbuddo, Forfar.
1908. JEFFREY, PETER, 15 Coates Gardens.
- 1902.*JOHNSTON, ALFRED WINTLE, Architect, 29 Ashburnham Mansions, Chelsea, London.
1905. JOHNSTON, C. N., K.C., LL.D., Sheriff of Inverness, Elgin, and Nairn, 4 Heriot Row.
1892. JOHNSTON, DAVID, 24 Huntly Gardens, Kelvinside, Glasgow.
1908. JOHNSTON, GEORGE HARVEY, 22 Garscube Terrace.
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900. JOHNSTON, WILLIAM, C.B., LL.D., M.D., Colonel (retired), Army Medical Staff, of Newton Dee, Murtle, Aberdeen.
1907. JOHNSTON, WILLIAM CAMPBELL, W.S., 19 Walker Street.
1892. JOHNSTONE, HENRY, M.A. Oxon. (Edinburgh Academy), 69 Northumberland Street.
1898. JONAS, ALFRED CHARLES, Locksley, Tennyson Road, Bognor, Sussex.
1910. KAY, ARTHUR, J.P., F.S.A., 11 Regent Terrace.
1893. KAYE, WALTER JENKINSON, B.A., F.S.A., Villa Léonie, Vence, A.M., France.
1912. KELLY, JOHN KELSO, 105 Morningside Drive.
- 1870.*KELTIE, JOHN S., LL.D., Secretary, Royal Geographical Society, 10 Albemarle Mansions, Heath Drive, Finchley Road, London, N.W.
1911. KENNEDY, ALEXANDER, Kenmill House, Bothwell.
1911. KENNEDY, ALEXANDER BURGESS, 18 East Claremont Street.
- 1880.*KENNEDY, JOHN, M.A., 25 Abingdon Street, Westminster.
1907. KENT, BENJAMIN WILLIAM JOHN, Tatefield Hall, Beckwithshaw, Harrogate.
1907. KENT, BRAMLEY BENJAMIN, Tatefield Hall, Beckwithshaw, Harrogate.
1910. KER, CHARLES, M.A., C.A., Easterton, Milngavie, Stirlingshire.
1912. KER, JAMES INGLIS, 162 West Princes Street, Glasgow.
- 1889.*KERMODE, PHILIP M. C., Advocate, Glen Aldyn, Ramsey, Isle of Man.
1889. KERR, ANDREW WILLIAM, F.R.S.E., Royal Bank House, St Andrew Square.
1896. KERR, HENRY F., A.R.I.B.A., 10 Randolph Place.
- 1911.*KETCHEN, W. T., W.S., Keeper of the General Register of Sasines, H.M. General Register House.
1911. KRYSER, CHARLES E., M.A., F.S.A., J.P., D.L., Aldermaston Court, Reading.
1912. KING, CHARLES, 21 Newton Place, Glasgow.
- 1912.*KING, Sir JOHN WESTALL, Bart., Stanmore, Lanark.
- 1900.*KINTORE, The Right Hon. The Earl of, G.C.M.G., LL.D., Keith Hall, Inverurie.
1912. KIRKE, Miss KATE JOHNSTONE, Hilton, Burdtsland.
1896. KIRKPATRICK, JOHN G., W.S., 32 Morningside Park, Edinburgh.
1906. KNOWLES, WILLIAM HENRY, F.S.A., Little Bridge, Gosforth, Newcastle-on-Tyne.
1910. LAIDLER, PERCY WARD, L.D.S., R.C.S., Edin., Westbrook, Darlington.
1890. LAING, JAMES H. W., M.A., B.Sc., M.B., C.M., 9 Tay Square, Dundee.
1899. LAMB, JAMES, Leabrac, Inverary Terrace, Dundee.
- 1901.*LAMONT, Sir NORMAN, Bart., M.P., of Knockdow, Toward, Argyllshire.

- 1892.***LANO**, Lieut.-Col. JAMES, 21 Kelvin-side Terrace, Glasgow.
1893. **LANGWILL**, ROBERT B., 7 St Leonard's Bank, Perth.
- 1882.***LEADBETTER**, THOMAS GREENSHIELDS, of Stobieside, Strathaven.
- 1910.***LEIGH**, JAMES HAMILTON, Colledon House, Inverness-shire.
1907. **LEIGHTON**, JOSEPH MACKENZIE, Librarian, Public Library, Greenock.
1907. **LENNOX**, DAVID, M.D., F.R.A.S., Tayside House, 182 Neithergate, Dundee.
- 1884.***LENNOX**, JAMES, Eden Bank, Dumfries.
- 1857.***LESLIE**, CHARLES STEPHEN, of Balquhain, 11 Chandoury, Aberdeen.
- 1902.***LEVESON-GOWEN**, F. S., Travellers Club, Pall Mall, London.
1907. **LIND**, GEORGE JAMES, 121 Rua do Golgotha, Oporto, Portugal.
1909. **LINDSAT**, Rev. JOHN, M.A., LL.D., St Peter's Vicarage, Limehouse, London, E.
1890. **LINDSAT**, LEONARD C., 22 Chester Square, London, S.W.
- 1873.***LINDSAT**, Rev. THOMAS M., D.D., Professor of Divinity, U.F. Church College, Glasgow.
1892. **LINTON**, SIMON, Oakwood, Selkirk.
- 1831.***LITTLE**, ROBERT, Ardenlea, Northwood, Middlesex.
1904. **LOCKHART**, Sir SIMON MACDONALD, Bart., of Lee and Cardwath, The Lee, Lanark.
- 1901.***LONEY**, JOHN W. M., 6 Carlton Street.
1882. **LOHMER**, GEORGE, Darisdale, Gillsland Road.
1902. **LOW**, GEORGE M., Actuary, 11 Moray Place.
1903. **LOWE**, D. F., M.A., LL.D., 19 George Square.
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- 1873.***LUMSDEN**, HUGH GORDON, of Clova, Lumsden, Aberdeenshire.
1903. **LUSK**, Rev. DAVID COLVILLE, 15 The Turl, Oxford.
1906. **LYLE**, JAMES, Waverley, Queen's Crescent.
1910. **LYONS**, ANDREW W., 44 India Street.
1892. **MAGADAM**, JOSEPH H., 38 Shoe Lane, London.
1910. **M'BAIN**, WILLIAM CROSS, J.P., 258 Kenmore Street, Glasgow.
1908. **M'CONACHIE**, Rev. WILLIAM, The Manse, Lander.
1889. **MACCORMICK**, Rev. FREDERICK H. J., Wrookwardine Wood Rectory, Wellington, Salop.
1913. **M'CORMICK**, Sir WILLIAM S., LL.D., Secretary to the Carnegie Trust, 13 Douglas Crescent.
1904. **MACDONALD**, CHARLES, Douglass Castle, Bowling.
1885. **MACDONALD**, COLL. REGINALD, M.D., St Lawrence, Ayr.
- 1903.***MACDONALD**, GEORGE, M.A., LL.D., 17 North Leamouth Gardens,—*Curator of Coins*.
1879. **MACDONALD**, JAMES, W.S., 21 Thistle Street.
1908. **MACDONALD**, JAMES, J.P., Dellifour House, Kingscote.
1909. **MACDONALD**, JOHN, Sutherland Arms Hotel, Golspie.
- 1890.***MACDONALD**, JOHN MATHESON, Moor Hill, Farnham, Surrey.
1882. **MACDONALD**, KENNETH, Tower Clerk of Inverness.
1890. **MACDONALD**, WILLIAM RAE, Neldpath, Wester Coates Avenue.
1896. **MACDOUGALL**, Sir JAMES PATTEN, K.C.B., Keeper of the Records of Scotland and Registrar-General, of Gallanach, Oban, 39 Heriot Row.
1912. **MACDOUGALL**, Major STEWART, of Langa, Ardfert, Argyll.
- 1872.***M'DOWALL**, THOMAS W., M.D., East Cottingwood, Merpeth.
1908. **M'ELNEY**, Rev. ROBERT, M.A., The Manse, Downpatrick, County Down.
1911. **M'EWEN**, HUGH DRUMMOND, Lynnhurst, Primrose Bank Road, Trinity.

1860. M'EWEN, JOHN COCHRANE, Trafford Bank, Inverness.
1892. M'EWEN, Rev. JOHN, Dyke, Forres.
1903. M'EWEN, W. C., M.A., W.S., 9 South Charlotte Street.
1899. MACFARLANE-GRIEVE, W. A., M.A. and S.C.L. Oxon., M.A. Cantab., of Penchise and Edenhall, Roxburghshire, Impington Park, Cambridgeshire.
1911. MACGIBBON, A. L., A.R.I.B.A., Architect, 65 Frederick Street.
1902. M'GILCHRIST, CHARLES R. B., J.P., 28 Penkett Road, Liscard, Cheshire.
1898. *MACGILLIVRAY, ANGUS, C.M., M.D., 23 South Tay Street, Dundee.
1878. MACGILLIVRAY, WILLIAM, W.S., 32 Charlotte Square.
1901. *MACGREGOR, ALASDAIR K., of Macgregor, The Hermitage, Rothesay, Isle of Bute.
1889. M'Hardy, Lt.-Col. Sir ALEXANDER BURNES, K.C.B., 3 Ravelston Park.
1898. MACINTOSH, Rev. CHARLES DOUGLAS, M.A., Minister of St Oran's Church, Connel, Argyllshire.
1897. *MACINTYRE, P. M., Advocate, Auchengower, Brackland Road, Callander.
1909. MACINTYRE, PETER, New Town, Inveraray.
1907. MACKAIN, Rev. W. JAMES, of Ardnarnurchan, Poslingford Vicarage, Clare, Suffolk.
1908. MACKAY, GEORGE, M.D., F.R.C.S.E., 20 Drumsheugh Gardens.
1903. MACKAY, GEORGE G., Melness, Hoylake, Cheshire.
1890. MACKAY, JAMES, Seend Manor, near Melksham, Wilts.
1888. MACKAY, J. F., W.S., Whitehouse, Crumond Bridge, Midlothian.
1912. MACKAY, NORMAN DOUGLAS, M.B., Ch.B., B.Sc., Dall-Avon, Aberfeldy.
1882. MACKAY, WILLIAM, LL.D., Solicitor, Inverness.
1909. MACKEAN, NORMAN M., Parkgate, Paisley.
1909. MACKECHNIE, JOHN MACLELLAN, Solicitor, 144 St Vincent Street, Glasgow.
1911. MACKENZIE, ALEXANDER J., Solicitor, 62 Academy Street, Inverness.
1887. MACKENZIE, DAVID J., Sheriff-Substitute, Battrasie, Troon, Ayrshire.
1891. *MACKENZIE, JAMES, 2 Billbank Cres.
1872. *MACKENZIE, Rev. JAMES B., 6 Woodburn Terrace.
1911. MACKENZIE, JOHN, Dunvegan House, Dunvegan, Skye.
1900. MACKENZIE, Sir KENNETH J., Bart., King's and Lord Treasurer's Remembrancer, 10 Moray Place.
1910. MACKENZIE, MURDO TOLME, M.B., Scolpaig, Lochmaddy.
1882. MACKENZIE, R. W. R., Earls Hall, Leuchars, Fife.
1870. *MACKENZIE, THOMAS, Glenalmond, Cameron Park, Edinburgh.
1904. MACKENZIE, WILLIAM COOK, 38 Mount Ararat Road, Richmond-on-Thames.
1904. MACKENZIE, W. M., M.A., 15 Queen Street.
1911. *MACKIE, PETER JEFFREY, of Glenreaddell, and Corralh, Symington, Ayrshire.
1888. *MAUKINLAY, J. M., M.A., The Lee, 18 Collinton Road, Merchiston.
1913. MACKINTOSH, H. B., Redhythe, Elgin.
1893. MACKINTOSH, WILLIAM FYFE, Procurator-Fiscal, 33 Magdalen Yard Road, Dundee.
1878. MACLAGAN, ROBERT CRAIG, M.D., 5 Coates Crescent.
1885. *MACLEHOSE, JAMES, M.A., 7 University Gardens, Glasgow.
1910. MACLEOD, FREDERICK THOMAS, 18 Mentone Terrace.
1890. *MACLEOD, Sir REGINALD, K.C.B., Vinters, Maidstone, Kent.
1909. MACLEOD, ROBERT CRAWFORD, 19 Scotland Street.
1907. MACLEOD, Rev. WILLIAM H., B.A. Cantab., Mauch of Buchannan, Drymen.
1875. MACMATH, WILLIAM, 16 St Andrew Square.
1905. MACMILLAN, H. P., Advocate, 32 Moray Place.
1909. MACPHAIL, J. R. N., Advocate, 55 Great King Street.

1913. MACPHERSON, CHARLES, 95 Langside Avenue, Glasgow.
1886. MACPHERSON, ARCHIBALD, Architect, 7 Young Street.
1909. MACRAE, CAPT. COLIN, of Feirlinn, Collintraive, Argyll.
1908. MACRAE, REV. DONALD, B.D., The Manse, Edderton, Ross-shire.
1914. MACRAE-GILSTRAP, Major JOHN, of Eilean Donan, Ballimore, Otter Ferry, Argyll.
- 1882.*MACRITCHIE, DAVID, C.A., 4 Archibald Place.
1909. MALCOLM, JOHN, Teacher, Alexandra Cottage, Monifieth, Forfarshire.
1896. MALLOCH, JAMES, M.A., Dudhope Villa, Dundee.
1914. MALLOCH, JAMES J., M.A., Wakefield, Juniper Green.
1901. MANN, LUDOVIC M'LELLAN, 144 St. Vincent Street, Glasgow.
1909. MANSON, WILLIAM, Searcher of Records, 18 Esslemont Road.
1906. MARSHALL, HENRY B., of Rachan, Broughton, Peeblesshire.
1885. MARSHALL, WILLIAM HUNTER, of Callander, Perthshire.
1909. MARTIN, REV. JOHN, 34 Inverleith Terrace.
1908. MASTIS, Professor JOHN, M.A., D.Sc., Ph.D., Litt.D., LL.D., etc., Woodleigh House, Totley Brook, Sheffield.
1892. MATHESON, AUGUSTUS A., M.D., 41 George Square.
1884. MAXWELL, The Right Hon. Sir HERBERT EUSTACE, Bart., LL.D., D.C.L., of Monreith, Wigtownshire.
- 1892.*MAXWELL, Sir JOHN STirling, Bart., LL.D., Pollok House, Pollokshaws.
1904. MAY, THOMAS, F.R.S., Glenearn, Perth Road, Crieff.
1887. MELDRUM, REV. ANDREW, M.A., Faughanlin, Pitlochry.
1900. MENZIES, W. D. GRAHAM, of Pitcur, Hallyburton House, Coupar-Angus.
1878. MERCER, Major WILLIAM LINDSAY, of Huntingtower, Perth.
1885. METCALFE, REV. W. M., D.D., South Manse, Paisley.
1913. METER-GRIFFITH, Major H. W. G., F.R.G.S., A.D.C., Government House, Sierra Leone.
1914. MIDDLEMISS, Rev. J. T., 3 The Beeches, West Didsbury, Manchester.
1882. MILLAR, ALEXANDER H., LL.D., Rosalyun House, Clepington Road, Dundee.
1896. MILLER, ALEXANDER C., M.D., Craig Linthe, Fort-William.
- 1878.*MILLER, GEORGE ANDERSON, W.S., Knowehead, Perth.
- 1910.*MILLER, JAMES, Headmaster, Fern Public School, Brechin.
1904. MILLER, JOHN CHARLES, North of Scotland and Town and County Bank, 67 St Vincent Street, Glasgow.
- 1907.*MILLER, ROBERT SCHAW, W.S., 14 Rosebery Crescent.
1911. MILLER, STEWART NAPIER, Lecturer in Latin, Glasgow University, Arbutnott, Bearsden, Glasgow.
1884. MITCHELL, HUGH, Solicitor, Pitlochry.
- 1886.*MITCHELL, RICHARD BLUNT, of Polmoor, 17 Regent Terrace.
- 1890.*MITCHELL, SYDNEY, Architect, The Pleasance, Gullane.
- 1882.*MITCHELL-THOMSON, Sir MITCHELL, Bart., 6 Charlotte Square.
1907. MOFFATT, ALEXANDER, M.A., LL.B., Advocate, Sheriff-Substitute of Stirlingshire, Arnotdale, Falkirk.
1908. MONTGOMERIE, JOHN CUNNINGHAM, of Dalmore, Stair, Ayrshire.
1895. MORAY, The Right Hon. The Earl of, Kinfauns Castle, Perth.
1903. MORAY, The Right Hon. ANNA, Countess Dowager of, Tarbat House, Kildary, Ross-shire.
1882. MORRIS, JAMES ARCHIBALD, Architect, Wellington Chambers, Ayr.
1907. MORRIS, JOSEPH, Fern Bank, Cernistoun Road, Corstorphine.
1882. MORRISON, HEW, LL.D., Librarian, Edinburgh Public Library, Torrisdale, 3 Corruennie Gardens.
- 1887.*MOUBRAY, JOHN J., Naemoor, Rambling Bridge.

1904. MOUNSEY, J. L., W.S., Professor of Conveyancing, University of Edinburgh, 24 Glencairn Crescent.
1897. MOXON, CHARLES, 77 George Street.
1889. MUIRHEAD, GEORGE, F.R.S.E., Commissioner for the Duke of Richmond and Gordon, Speybank, Fochabers.
1897. MUNRO, JOHN, J.P., Dun High, Oban.
1879. *MUNRO, ROBERT, M.A., M.D., LL.D., Elmhurst, Largs, Ayrshire.
1890. *MUNRO, Rev. W. M., New Park, St Andrews.
1899. MUNRO-FERGUSON, The Right Hon. Sir RONALD CRAUFURD, Bart., of NOVER, K.C.M.G., Raith, Kirkcaldy.
1911. MURCHIE, JAMES, Penrioch, Kingcase, Prestwick, Ayrshire.
1906. MURRAY, ANDREW ERNEST, W.S., 10 Ann Street.
1910. MURRAY, CHARLES HOPE, jun., Stockbroker, 98 West George Street, Glasgow.
1878. *MURRAY, DAVID, M.A., LL.D., 169 West George Street, Glasgow.
1906. MURRAY, JOHN CONGREY, 18 Lennox Street.
1911. MURRAY, KEITH R., B.A., 27 St Leonard's Terrace, Chelsea, London.
1884. MURRAY, PATRICK, W.S., 7 Eton Terrace.
1905. MURRAY, P. KEITH, W.S., 1 Douglas Gardens.
1905. *NAISMITH, WILLIAM W., C.A., 57 Hamilton Drive, Glasgow.
1911. *NAPIER, GEORGE G., M.A., 9 Woodside Place, Glasgow.
1907. NAPIER, HENRY M., Milton House, Bowling.
1896. NAPIER, THEODORE, c/o Mrs Farquharson, 10 Melville Crescent.
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1906. NELSON, THOMAS A., St Leonard's, Dalkeith Road.
1900. NEWLANDS, The Right Hon. Lord, LL.D., Mauldslee Castle, Carlisle.
1887. NEWTON, R. N. H., 3 Eglinton Crescent.
1907. NICOLSON, DAVID, C.B., M.D., 201 Royal Courts of Justice, Strand, London (Blythwood, Camberley, Surrey).
1877. *NIVEN, ALEXANDER T., C.A., 28 Fountainhall Road.
1891. NOBLE, ROBERT, Heronhill, Hawick.
1905. NORRIE, JAMES A., Craigtay, Ferry Road, Dundee.
1898. NOTMAN, JOHN, F.F.A., 176 Newhaven Road, — *Treasurer*.
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1907. *OKE, ALFRED WILLIAM, B.A., F.L.S., 32 Denmark Villas, Hove, Sussex.
1904. OLDBRIVE, W. T., F.R.I.B.A., 13 Braid Avenue, — *Vice-President*.
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1907. ORR, JOHN M'KIRDY, 32 Dockhead Street, Saltcoats.
1908. ORROCK, ALEXANDER, 13 Dick Place.
1901. OWER, CHARLES, Architect, Benora, Broughty Ferry.
1903. PARK, ALEXANDER, Ingleside, Lenzie.
1906. PATERSON, Miss OCTAVIA G., Ashmore, Helensburgh.
1891. PATON, VICTOR ALBERT NORL, W.S., 31 Melville Street.
1880. PATTERSON, JAMES K., Ph.D., LL.D., President-Emeritus, State University of Kentucky, Lexington, Kentucky, U.S.A.
1914. PATTERSON, T. BAXENDALE, LL.D.S., Cribsbrooke, 84 Station Road, Blackpool.
1909. PAUL, ARTHUR F. BALFOUR, Architect, 16 Rutland Square.
1871. *PAUL, Sir GEORGE M., LL.D., W.S., Deputy Keeper of the Signet, 16 St Andrew Square.

1879. PAUL, Sir J. BALFOUR, LL.D., C.V.O. Advocate, Lord Lyon King-of-Arms, 30 Heriot Row.
1913. PAUL, J. N. WILFRED, B.A., M.R.E.I.S., Rector, Grammar School, Alwar, Rajputana.
- 1902.*PAULIN, Sir DAVID, F.F.A., 6 Forbes Street.
1891. PEACE, THOMAS SMITH, Architect, Junction Road, Kirkwall.
1913. PEACOCK, A. WEBSTER, Architect, 140 Princes Street.
1904. PEDDIE, ALEXANDER L. DICK, W.S., 13 South Learmouth Gardens.
1879. PEDDIE, JOHN M. DICK, Architect, 8 Albany Place.
1900. PHILLIPS, W. RICHARD, Architect, Westbourne Lodge, Goldhawk Road, Ravenscourt Park, London.
1912. PORTEOUS, ALEXANDER, Ancaster House, St Fillans, Perthshire.
- 1901.*PORTLAND, His Grace The Duke of, K.G., Welbeck Abbey, Notts.
1911. PRESTON, FRANK A. B., Architect, Ardwell, 16 Waverley Park, Shawlands, Glasgow.
1905. PRICE, C. REES, Walnuts, Broadway, Worcestershire.
1900. PRIMROSE, Rev. JAMES, M.A., 58 West Princes Street, Glasgow.
1906. PRINGLE, ROBERT, 11 Barnton Gardens, Davidson's Mains.
1907. PULLAR, HERBERT S., Dunbarrie Cottage, Bridge of Earn.
1912. QUICK, RICHARD, Superintendent of Art Gallery and Antiquities, Bristol Museum, Bristol.
1906. RAIT, ROBERT SANGSTER, 31 Lilybank Gardens, Glasgow.
1891. RAMSAY, WILLIAM, of Bowland, Stow.
1908. RANKIN, WILLIAM BLACK, of Cleddans, 9 Landsdowne Crescent.
1879. RANKINE, JOHN, K.C., M.A., LL.D., Professor of Scots Law, University of Edinburgh, 23 Ainslie Place.
1913. RATTRAY, GEORGE D., 7 Springfield, Dundee.
1906. RAVEN, ALEXANDER JAMES, Conifer Hill, Starston, Harleston, Norfolk.
1899. REA, ALEXANDER, Superintendent of the Archeological Survey of South India, Madras.
1901. REID, ALAN, F.E.I.S., The Loaning, Merchiston Bank Gardens.
1909. REID, ALPHONSO STODART, Bank of England, Manchester.
- 1897.*REID, Rev. EDWARD T. S., M.A., Ravelston, 994 Great Western Road, Glasgow.
1912. RICHARDSON, JAMES S., Architect, 4 Melville Street.
1896. RICHARDSON, RALPH, W.S., 10 Magdala Place.
- 1886.*RITCHIE, CHARLES, S.S.C., 29 Hill Street.
1907. ROBE, Rev. JAMES, M.A., B.D., 7 Albanley Terrace.
- 1895.*ROBERTS, ALEXANDER F., Fairnielee, Selkirk.
1905. ROBERTS, JOHN, C.M.G., Littlebourne House, Dunedin, New Zealand.
1914. ROBERTS, J. HUBERT, Bryntirion, Eaton Grove, Swansea.
- 1901.*ROBERTS, THOMAS J. S., of Drygrange, Melrose.
1879. ROBERTSON, GEORGE, 6 Craigkennochie Terrace, Burntisland.
1910. ROBERTSON, JOHN, 27 Victoria Road, Dundee.
1913. ROBERTSON, JOHN CHARLES, Cavalry Barracks, Norwich.
- 1886.*ROBERTSON, ROBERT, Huntly House, Dollar.
1905. ROBERTSON, W. G. AITCHISON, M.D., D.Sc., F.R.C.P.E., Mayfield Lodge, 2 Mayfield Gardens.
1914. ROBISON, JOSEPH, 14 Castle Street, Kirkcudbright.
- 1871.*ROLLO, The Right Hon. Lord, Dunerub House, Dunning.
1905. ROLLO, JAMES A., Solicitor, Argyle House, Maryfield, Dundee.
1910. ROMANES, CHARLES S., C.A., 3 Abbotsford Crescent.

1872. *ROSEBURY, The Right Hon. The Earl of, K.G., K.T., LL.D., Dalmeny Park.
1876. ROSS, ALEXANDER, LL.D., Architect, Queensgate Chambers, Inverness.
1891. ROSS, THOMAS, LL.D., Architect, 14 Saxe-Coburg Place.
1910. RUSSELL, ARTHUR W., M.A., W.S., 18 Learmonth Gardens.
1906. RUSSELL, Rev. JAMES C., D.D., 9 Coates Gardens.
1914. RUSSELL, JOHN, 323 Leith Walk.
1911. SAMUEL, JOHN SMITH, 8 Park Avenue, Glasgow, W.
1907. SANDEMAN, DAVID D., Cairniebank House, Arbroath.
1903. *SAYCE, Rev. A. H., M.A., LL.D., D.D., Professor of Assyriology, Oxford, 8 Chalmers Crescent, Edinburgh,—*Foreign Secretary*.
1912. SCLATER, Rev. HENRY GUY, Bowmore, Islay.
1910. SCOBIE, Lieut. IAN H. MACKAY, of the Essex Regiment, c/o Messrs COX & Co., Charing Cross, London.
1892. SCOTT, Sir JAMES, J.P., Rock Knowe, Tayport.
1914. SCOTT, JAMES HALL, Palma Place, Melrose.
1904. SCOTT, Rev. JAMES HAY, Corsknowe, High Cross Avenue, Melrose.
1903. SCOTT, JOHN, W.S., 13 Hill Street.
1901. SCOTT, J. H. E. KINNAIRD, of Gala, Gala House, Galashiels.
1907. SCOTT, THOMAS G., 186 Ferry Road.
1898. SCOTT-HALL, The Right Rev. Lord Bishop W. E., Bishop's House, Oxford.
1893. SCOTT-MONCRIEFF, Sir COLIN, 11 Cheyne Walk, Chelsea, London.
1893. SCOTT-MONCRIEFF, DAVID, W.S., 24 George Square.
1907. SCOTT-MONCRIEFF, ROBERT, W.S., 10 Randolph Cliff,—*Secretary*.
1889. SCOTT-MONCRIEFF, W. G., M.A., Sheriff-Substitute, Edgemoor, Lanark.
1913. SHAND, J. HARVEY, W.S., 38 Northumberland Street.
1908. SHEARER, JOHN E., 6 King Street, Stirling.
1907. SHEPPARD, THOMAS, F.G.S., Curator of the Municipal Museum, Hull.
1892. SHIELLS, HENRY K., C.A., 141 George Street.
1913. SIM, Rev. GUSTAVUS AIRD, Valetta, Malta.
1871. *SIMPSON, Sir ALEXANDER R., M.D. LL.D., 52 Queen Street.
1880. *SIMPSON, ROBERT R., W.S., 23 Douglas Crescent.
1908. SINCLAIR, COLIN, M.A., Architect, 35 Clifford Street, Ibrox, Glasgow.
1910. SINTON, Rev. THOMAS, D.D., Minister of Dore, Inverness-shire.
1907. SKERRINGTON, The Hon. Lord, 12 Randolph Crescent.
1909. SKINNER, ROBERT TAYLOR, M.A., F.R.S.E., House Governor, Donaldson's Hospital.
1902. SMITH, A. DUNCAN, Advocate, Rosehill, Banchory-Ternan.
1910. SMITH, DAVID BAIRD, LL.B., 6 Woodlands Terrace, Glasgow.
1898. SMITH, DAVID CRAWFORD, 4 Queen Street, Craigie, Perth.
1892. SMITH, G. GREGORY, LL.D., Professor of English Literature, University of Belfast, 26 Windsor Park, Belfast.
1898. SMITH, Rev. JAMES, M.A., B.D., Minister of St George's-in-the-West, 13 Albert Street, Aberdeen.
1889. SMITH, ROBERT, Solicitor, 9 Ward Road, Dundee.
1902. SMITH, WILLIAM B., 34 Newark Drive, Pollokshields, Glasgow.
1892. *SMYTHE, Colonel DAVID M., Methven Castle, Perth.
1892. SOMERVILLE, Rev. J. E., B.D., Castellar, Crieff.
1910. *SPENCER, CHARLES LOUIS, 5 Great Western Terrace, Glasgow.
1910. *SPENCER, JOHN JAMES, 5 Great Western Terrace, Glasgow.
1882. SPRAGUE, THOMAS B., M.A., LL.D., 29 Buckingham Terrace.
1913. SQUANCE, THOMAS COKE, M.D., 15 Grange Crescent, Sunderland.

1903. *STARK, Rev. WILLIAM A., Minister of Kirkpatrick-Durham, Dalbeattie.
1904. STEEL, Rev. JAMES, D.D., Vicar of Heworth, Gateshead, Newcastle-on-Tyne.
1891. STEELE, WILLIAM, Inland Revenue, Marlborough Cottage, Kelso.
1901. STEUART, A. FRANCIS, Advocate, 79 Great King Street.
1902. STEUART, JAMES, W.S., 25 Rutland Street.
1912. STEVENSON, DAVID, Firenze, 93 Trinity Road.
1895. STEVENSON, JOHN HORNE, M.A., Advocate, 9 Oxford Terrace.
1913. STEVENSON, NORMAN, Dechmont View, Sandyhills, Shettleston.
1913. STEVENSON, PERCY R., 5 North Charlotte Street.
1904. STEVENSON, Major-General T. R., C.B., of Sunnyside, Lanark.
1911. STEWART, A. K., 4 Midmar Avenue.
1879. STEWART, CHARLES POYNTE, Chestfield Park, Stevenage.
1901. STEWART, Sir HUGH SHAW, Bart., Ardgowan, Greenock.
1901. STEWART, Sir MARK J. M'TAGGART, Bart., Ardwell, Stranraer.
1913. STEWART, R. RANNOCH, 12 Lorne Terrace, Maryhill, Glasgow.
1885. STEWART, ROBERT KING, Murdoctoun Castle, Newnains, Lanarkshire.
1914. STEWART, W. BALFOUR, Fir Grove, Park Road West, Birkenhead.
1908. STIRTON, Rev. JOHN, B.D., The Manse, Glamis, Forfarshire.
1907. STONESTREET, Rev. WILLIAM T., D.D., Rossendale, Aneddell, Lytham, Lancashire.
1889. STRATHERN, ROBERT, W.S., 13 Eglinton Crescent.
1910. STRUTHERS, Sir JOHN, K.C.H., LL.D., 16 Hereford Square, London.
1904. STUART, Rev. JOHN, B.D., Kirkton Manse, Hawick.
1907. STUART, WILLIAM, Burnhouse, Stow, Midlothian.
1897. SULLY, PHILIP, Moray Street, Elgin.
1887. SUTHERLAND, J. R., S.S.C., 10 Royal Terrace.
1899. *SUTHERLAND, ROBERT M., Solsgirth, Dollar.
1911. SUTHERLAND-GRAEME, A. W., Ardenhan, Inverurie, Aberdeenshire.
1897. SUTTIE, GEORGE C., J.P., of Lalathan, Lalathan Lodge, St Cyrus, by Montrose.
1884. SWALLOW, Rev. H. J., M.A., Hawthorn Rectory, Sunderland.
1900. SWINTON, Capt. GEORGE S. C., 2 Hyde Park Street, London.
1910. *SYKES, FRANK, Brookfield, Cheadle, Cheshire.
1913. SYKES, FRANK, Lorne Villa, New Barnet, Herts.
1910. TAIT, GEORGE HOPE, 23 High Street, Galashiels.
1901. TAYLOR, Rev. WILLIAM, M.A., Minister of Melville Parish, Montrose.
1910. TERRY, Rev. GEORGE FREDERICK, F.S.A., Rector of St John's Episcopal Church, 10 Learmonth Terrace.
1896. THIN, JAMES, 22 Lauder Road.
1902. THIN, ROBERT, M.A., M.B., C.M., 25 Abercromby Place.
1910. THOMAS, H. D., M.A. Oxon., Joint Headmaster of Cargiffield School, Cramond Bridge.
1900. THOMSON, ANDREW, Burgh School, Galashiels.
1908. *THOMSON, DAVID COOPER, J.P., D.L., Inveravon, Broughty Ferry.
1911. THOMSON, JAMES, M.A., LL.B., Solicitor, 1 West Bell Street, Dundee.
1913. THOMSON, JAMES, The Cedars, Fortiagreen Road, East Finchley, London, N.
1913. THOMSON, JOHN GORDON, S.S.C., 54 Castle Street.
1896. THOMSON, J. MAITLAND, LL.D., Advocate, 3 Grosvenor Gardens.
1910. THOMSON, WILLIAM N., Architect, 85 Constitution Street, Leith.
1898. THORBURN, MICHAEL GRIEVE, of Glenormiston, Innerleithen.
1911. THORBURN, WILLIAM, Headmaster of the Public School, Ecclefechan, Dumfriesshire.

1907. THORP, JOHN THOMAS, LL.D., Brunswick House, 54 Princess Road, Leicester.
1910. TODD, HENRY GUICHARDE, Architect, 3 Adelaide Villas, New Barnet, Herts.
- 1902.*TRAILL, H. LIONEL NORTON, F.R.G.S., Capt. 4th Highland Light Infantry, Grattan Lodge, Vicarstown, Stradbally, Queen's County, Ireland.
1899. TULLOCH, Major-Gen. Sir ALEXANDER BRUCE, K.C.B., C.M.G., Llanwysak, Crickhowell, S. Wales.
- 1887.*TURNBULL, WILLIAM J., 16 Grange Terrace.
1901. TURNBULL, W. S., Aikenshaw, Rosebath.
- 1865.*TURNER, Sir WILLIAM, K.C.B., M.B., LL.D., D.C.L., Principal of the University of Edinburgh, 6 Eton Terrace.
- 1878.*URQUHART, JAMES, N.P., Assistant Keeper, General Register of Sasines, 13 Darnley Street.
- 1905.*USHER, Sir ROBERT, Bart., of Norton and Wells, Wells, Hawick.
1895. VALLANCE, DAVID J., 27 Queen's Crescent.
1904. WADDELL, JAMES ALEXANDER, of Leadloch, 12 Kew Terrace, Glasgow.
1900. WALKER, JOHN, M.A., Solicitor, 16 Euclid Crescent, Dundee.
1884. WALKER, R. C., Wingate Place, Newport, Fife.
1879. WALLACE, THOMAS, Ellerslie, Inverness.
1910. WALLACE, THOMAS A., 12 Abinger Gardens, Murrayfield.
1876. WATERSTON, GEORGE, 10 Claremont Crescent.
1904. WATLING, H. STEWARD, Architect, White Gables, Dovercourt, Essex.
- 1891.*WATSON, Rev. ALEXANDER DUFF, B.D., U.F.C. Manse, Bourtreebush, Stonehaven.
- 1907.*WATSON, CHARLES B. BOOG, F.R.S.E., Huntly Lodge, 1 Napier Road.
1913. WATSON, G. P. H., 15 Queen Street.
1904. WATSON, JOHN, Architect, 27 Rutland Street.
1908. WATSON, JOHN PARKER, W.S., Grey-stone, Kinellan Road, Murrayfield.
1904. WATSON, WALTER CHUM, B.A. Oxon., 50 Queen Street.
1912. WATSON, WILLIAM J., M.A., LL.D., F.R.S.E., Professor of Celtic Languages, Literature and Antiquities, University of Edinburgh, 17 Merchiston Avenue.
- 1907.*WATT, JAMES, W.S., F.F.A., 24 Rothesay Terrace.
1908. WATT, Rev. LAUCHLAN MACLEAN, M.A., B.D., 7 Royal Circus.
1879. WEDDERBURN, J. R. M., M.A., W.S., 3 Glencairn Crescent.
- 1884.*WHITE, CECIL, 23 Drummond Place.
1914. WHITE, GEORGE DUNCAN, of Kilrenny, 25 Marketgate, Crail.
1904. WHITE, JAMES, St Winnin's, Bearsden, Dunbartonshire.
- 1869.*WHITE, Col. THOMAS PILKINGTON, R.E., 3 Hesketh Crescent, Torquay.
1903. WHITELAW, ALEXANDER, of Gartshore, Kirkintilloch.
- 1902.*WHITELAW, CHARLES EDWARD, Architect, 219 St Vincent Street, Glasgow.
1885. WHITELAW, DAVID, 3 Victoria Terrace, Musselburgh.
1907. WHITELAW, HARRY VINCENT, Ryden, Kilnacolm, Renfrewshire.
1913. WHITESIDE, Rev. JOSEPH, M.A., Helsington Vicarage, Kendal.
1909. WHITTAKER, CHARLES RICHARD, F.R.C.S., Lynwood, 27 Hailton Place.
1913. WHITTAKER, Professor EDMUND T., M.A., Hon. Sc.D., F.R.S., 35 George Square.
1908. WILKIE, JAMES, B.L., S.S.C., 108 George Street.
1913. WILKIE-DALYELL, Major Sir JAMES BRUCE, Bart., of The Blinds, Lidlithgow.
1911. WILKINSON, Rev. JOHN, Rector of St Peter's Church, The Rectory, Peterhead.

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| 1894. WILLIAMS, FREDERICK BESSANT, 3 Essex
Grove, Upper Norwood, London,
S.E.
1895. WILLIAMS, Rev. GEORGE, Minister of
Norrieston U.F. Church, Thornhill,
Perthshire.
1897. WILLIAMS, HARRY M., Tilehurst,
81 Priory Road, Kew, Surrey.
1908. WILSON, ANDREW ROBERTSON, M.A.,
M.D., of Hopewell, Aberdeenshire,
Cairnmore, Rose Side Road, Liscarl,
Cheshire.
1913. WILSON, Rev. THOMAS, B.D., The
Manse, Stow, Midlothian. | 1912. WILSON, Rev. W. B. ROBERTSON,
Strathdevon, Dollar.
1888. WILSON, The Very Rev. W. HAY,
Dean of Moray, Dingwall.
1907. WOOD, WILLIAM JAMES, 266 George
Street, Glasgow.
1903. WRIGHT, Rev. FREDERICK G., Hopton
Wafers Rectory, Cleobury Mortimer,
Salop.
1913. YOUNG, THOMAS E. W.S., Auchter-
arder.
1912.*YULE, THOMAS, W.S., 16 East Clare-
mont Street. |
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SUBSCRIBING LIBRARIES.

University College, Dublin.
 Harvard College, Harvard, U.S.A.
 The John Rylands Library, Manchester.
 The Central Public Library, Bristol.
 Baillie's Institution, Glasgow.
 University of Illinois, Urbana, Illinois, U.S.A.
 The Free Public Library, Boston, Massachusetts, U.S.A.
 The Public Library Aberdeen.
 The Yale University Library, New Haven, Connecticut, U.S.A.
 The State Historical Society of Wisconsin, Madison, Wisconsin, U.S.A.

LIST OF THE CORRESPONDING MEMBERS OF THE SOCIETY OF ANTIQUARIES OF SCOTLAND.

November 30, 1914.

- | | |
|--|--|
| 1900. BUCHANAN, MUNGO, 23 South Alma Street, Falkirk. | 1909. MACKENZIE, DONALD, Inland Revenue, Bonny Bridge. |
| 1908. CASH, C. G., Teacher, Edinburgh Academy, 15 Barnton Gardens, Davidson's Mains. | 1908. MACKENZIE, WILLIAM, Procurator-Fiscal, Dingwall. |
| 1913. FRASER, JOHN, 65 Restalrig Road, Leith. | 1904. MACKIE, ALEX. Pitressie, Abernethy. |
| 1911. GOUDIE, JAS. M., J.P., Lerwick, Shetland. | 1911. NICOLSON, JOHN, Nybster, Caithness. |
| 1914. KIRKNESS, W., Fernlea, Kirkwall. | 1903. RITCHIE, JAMES, Hawthorn Cottage, Inverurie. |
| 1910. LIVINGSTONE, MATTHEW, I.S.O., 32 Hermitage Gardens, Edinburgh. | 1906. SINCLAIR, JOHN, St Ann's, 7 Queen's Crescent, Edinburgh. |
| | 1913. STOUT, MISS ELIZABETH, Hamnavoe, Barra Isle, Shetland. |

LIST OF HONORARY MEMBERS
OF THE
SOCIETY OF ANTIQUARIES OF SCOTLAND,
NOVEMBER 30, 1914.

[According to the Laws, the number is limited to TWENTY-FIVE.]

1879.

Rev. Canon WILLIAM GREENWELL, M.A., D.C.L., Durham.

1885.

Dr HANS HILDEBRAND, Emeritus Royal Antiquary of Sweden, Stockholm.

Dr ERNEST CHANTRE, The Museum, Lyons.

1892.

Professor LUIGI FIGORINI, Director of the Royal Archæological Museum,
Rome.

1897.

5 W. M. FLINDERS PETRIE, D.C.L., LL.D., Edwards Professor of Egyptology
in University College, London.

Sir JOHN RHYS, M.A., LL.D., Professor of Celtic, and Principal of Jesus College, Oxford.

Dr SOPHUS MULLER, Secretary of the Royal Society of Northern Antiquaries, and Director of the National Museum, Copenhagen.

Professor OSCAR MONTELIUS, LL.D., Emeritus Royal Antiquary of Sweden, Stockholm.

1900.

EMILE CARTAILHAC, 5 Rue de la Chaine, Toulouse.

- 10 F. J. HAVERFIELD, M.A., LL.D., Camden Professor of Ancient History, Winshields, Headington Hill, Oxford.

Rev. S. BARING GOULD, Lew Trenchard, North Devon.

ROBERT BURNARD, Huccaby House, Princetown, S. Devon.

CHARLES W. DYMOND, The Castle, Sawrey, Ambleside.

1908.

Sir ARTHUR JOHN EVANS, M.A., D.C.L., Youlbury, near Oxford.

- 15 SALOMON REINACH, Director of the National Museum of Antiquities of France, St Germain-en-Laye.

Professor H. DRAGENDORFF, Zehlendorferstrasse, 55 Lichterfelde (West), Berlin-Gr.

Professor E. RITTERLING, Director of the Römisch-Germanische Kommission, Eschersheimers Landstrasse 107, Frankfurt-on-Main.

JOSEPH DÉCHELETTE, Curator of the Museum, Roanne, Loire, France.

1909.

The Hon. Sir SCHOMBERG McDONNELL, K.C.B., C.V.O., Dalness, Taynuilt, Argyllshire.

1913.

- 20 JOSEPH ANDERSON, LL.D., H.R.S.A., 8 Great King Street, Edinburgh.

LIST OF THE LADY ASSOCIATES
OF THE
SOCIETY OF ANTIQUARIES OF SCOTLAND,
NOVEMBER 30, 1914.

[According to the Laws, the number is limited to TWENTY-FIVE.]

1888.

The Right Hon. The COUNTESS OF SELKIRK, Balmae, Kirkcudbright.

1890.

Mrs P. H. CHALMERS of Avochie.

1894.

Miss EMMA SWANN, Walton Manor, Oxford.

1895.

Miss H. J. M. RUSSELL of Ashiestiel, Galashiels.

5 Miss AMY FRANCES YULE of Tarradale, Ross-shire.

1900.

Miss M. A. MURRAY, Edwards Library, University College, London.

7 Mrs E. S. ARMITAGE, Westholm, Rawdon, Leeds.

SOCIETIES, INSTITUTIONS, &c., EXCHANGING PUBLICATIONS.

- The Society of Antiquaries of London.
- The Royal Society of Antiquaries of Ireland.
- The Cambrian Archaeological Association.
- The Royal Archaeological Institute of Great Britain and Ireland.
- The British Archaeological Association.
- The Society of Architects.
- The Architectural, Archaeological, and Historic Society of Chester.
- The Derbyshire Archaeological and Natural History Association.
- The Essex Archaeological Society.
- The Kent Archaeological Society.
- The Historic Society of Lancashire and Cheshire.
- The Associated Architectural Societies of Lincoln and Nottingham, etc.
- The Society of Antiquaries of Newcastle-upon-Tyne.
- The Somersetshire Archaeological and Natural History Society.
- The Surrey Archaeological Society.
- The Sussex Archaeological Society.
- The Geological Society of Edinburgh.
- The Berwickshire Naturalists' Club.
- The Royal Anthropological Institute.
- The Wiltshire Archaeological Society.
- The Royal Irish Academy.
- The Bristol and Gloucestershire Archaeological Society.
- The Royal Numismatic Society.
- The Shropshire Archaeological Society.
- The Dumfriesshire Natural History and Antiquarian Society.

The Scottish Ecclesiological Society.
 The Edinburgh Architectural Association.
 The New Spalding Club.
 The Cambridge Antiquarian Society.
 The Royal Historical Society.
 The Literary and Scientific Society.
 The Yorkshire Archaeological Society.
 The Perthshire Natural History Society.
 The Thoresby Society.
 The Buchan Field Club.
 The Viking Club.
 The Glasgow Archaeological Society.
 The Stirling Natural History and Archaeological Society.
 The Hawick Archaeological Society.
 The Gaelic Society of Inverness.
 The Royal Commission on Ancient and Historical Monuments in
 Scotland.
 The Buteshire Natural History Society.

FOREIGN SOCIETIES, UNIVERSITIES, MUSEUMS, &c.

The Royal Society of Northern Antiquaries, Copenhagen.
 La Société Nationale des Antiquaires de France.
 Antiquarische Gesellschaft, Zürich.
 Verein von Alterthumsfreunden im Rheinlande, Bonn.
 The Smithsonian Institution, Washington, U.S.A.
 The Canadian Institute, Toronto.
 The Museum, Bergen, Norway.
 Foreningen til Norske Fortidsminde-merkens Bevaring.
 The Royal Academy of History and Antiquities, Stockholm.
 The Bureau of Ethnology, Washington.
 The Peabody Museum.
 Gesellschaft für Nützliche Forschungen, Trier.
 Physic-Ökonomische Gesellschaft, Königsberg.
 Berliner Gesellschaft für Anthropologie.
 Anthropologische Gesellschaft, Vienna.

- Société d'Archéologie de Bruxelles.
 Société des Bollandists, Brussels.
 Société d'Anthropologie de Paris.
 Société Archéologique de Namur.
 Reale Accademia dei Lincei, Rome.
 Die Alterthumsgesellschaft, Prussia.
 Römisch-Germanisches Central Museum, Mainz.
 Römisch-Germanische Kommission des Kaiserlichen Archæologischen
 Instituts, Frankfurt am Main.
 Städtisches Museum für Völkerkunde, Leipzig.
 La Société Archéologique de Moravie.
 Prähistorische Kommission der Kaiserliche Akademie der Wissen-
 schaften in Wien.
 Centralblatt für Anthropologie, Stettin.
 Société Archéologique du Midi de la France.
 Société Archéologique de Montpellier.
 L'Académie des Inscriptions et Belles Lettres, Paris.
 La Commissione Archeologica Comunale di Roma.
 La Société d'Anthropologie de Paris.
 La Musée Guimet, Paris.
 La Société Archéologique de Constantine, Algeria.
 National Museum of Croatia.
 Bosnisch-Herzegovinisches Landes-Museum, Sarajevo.
 Schweizerisches Landesmuseum, Zürich.
 Nordiska Museet, Stockholm.
 Norsk Folkemuseum, Christiania.
 Museum of Northern Antiquities, Christiania.
 The Royal Bohemian Museum, Prague.
 Societa Romana di Antropologia, Rome.
 La Société d'Histoire et d'Archéologie de Gaud.
 Kongelige Norske Videnskabers Selskab, Trondhjem.
 Historische und Antiquarische Gesellschaft, Basel.
 La Société Finlandaise d'Archéologie.
 Faculté des Sciences de Lyon.
 La Société des Antiquaires de l'Ouest.
 Der Historische Verein für Niedersachsen.

Göteborg och Bohuslans Fornminnesföreningen.
 The Archaeological Survey of India.
 Verein für Nassauische Alterthumskunde, Wiesbaden.
 The Provincial Museum, Toronto, Canada.
 The British School at Rome.
 The University of California.
 Columbia University Library.
 Die Saalburg Kommission, Homburg, v. d. H.
 Institut de Paléontologie Humaine, Paris.

PUBLISHERS.

The Antiquary, London.
L'Anthropologie, Paris.

LIBRARIES, BRITISH.

Edinburgh Public Library.
 Scottish National Portrait Gallery Library.
 Glasgow University Library.
 Edinburgh University Library.
 Aberdeen University Library.
 St Andrews University Library.
 The United Free Church College Library, Edinburgh.
 The Signet Library, Edinburgh.
 The Advocates' Library, Edinburgh.
 The British Museum Library.
 The Bodleian Library, Oxford.
 The University Library, Cambridge.
 Trinity College Library, Dublin.
 The Royal Library, Windsor.
 The Liverpool Free Library.
 The Athenæum Club Library, London.
 The Ordnance Survey Library, Southampton.
 Chetham's Library, Manchester.
 The Library of the Public Record Office, London.
 The Library, Victoria and Albert Museum, London.

The Library of the Dean and Chapter, Durham.
 The Mitchell Library, Glasgow.
 The Library of the Faculty of Procurators, Glasgow.

LIBRARIES, FOREIGN.

The University Library, Christiania.
 The University Library, Upsala.
 The Royal Library, Stockholm.
 The University Library, Kiel.
 The University Library, Leipzig.
 The Royal Library, Dresden.
 The Royal Library, Berlin.
 The Imperial Library, Vienna.
 The National Library, Paris.
 The Public Library, Hamburg.
 The University Library, Göttingen.
 The Royal Library, Munich, Bavaria.
 The Royal Library, Copenhagen.
 The Newberry Library, Chicago, U.S.A.

PROCEEDINGS
OF THE
SOCIETY OF ANTIQUARIES OF SCOTLAND.

HUNDRED AND THIRTY-FOURTH SESSION, 1913-1914.

ANNIVERSARY MEETING, 1st December 1913.

THE RIGHT HON. SIR HERBERT MAXWELL, BART.,
LL.D., D.C.L., F.R.S., President, in the Chair.

Professor T. H. Bryce and Mr W. T. Oldrieve were appointed Scrutineers of the Ballot for the election of Office-Bearers.

The Ballot having been taken, the Scrutineers found and declared the following to be the List of the Office-Bearers for the ensuing year :—

President (Elected for Five Years).
The Hon. JOHN ABERCROMBY, LL.D.

Vice-Presidents (Elected for Three Years).
The Hon. LORD GUTHRIE.
W. T. OLDRIEVE, F.R.I.B.A.
GEORGE NEILSON, LL.D.

Councillors.

JOHN R. FINDLAY,	} <i>Representing the Board of Trustees.</i>	ROBERT DE CARDONNEL FINDLAY.
The Hon. HEW H. DALRYMPLE.		ERSKINE BEVERIDGE, LL.D.
Sir KENNETH J. MACKENZIE, Bart., <i>Representing the Treasury.</i>		ANDREW HENDERSON BISHOP.
The Most Hon. THE MARQUESS OF BUTE.		NEIL J. K. COCHRAN-PATRICK.
WILLIAM MOIR BRYCE.		PATRICK MURRAY, W.S.
		JAMES E. CREE.
		J. M. MACKINLAY.

Secretaries.

ROBERT SCOTT-MONCRIEFF, W.S.	J. GRAHAM CALLANDER.
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For Foreign Correspondence.

Rev. Professor A. H. SAYCE, M.A., LL.D., D.D.	Professor G. BALDWIN BROWN.
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Treasurer.

JOHN NOTMAN.

Curators of the Museum.

JAMES CURLE, W.S.	Professor THOMAS H. BRYCE.
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Curator of Coins.

GEORGE MACDONALD, M.A., LL.D.

Librarian.

W. K. DICKSON, LL.D.

A Ballot having been taken, the following were duly elected Fellows :—

WILLIAM ARTHUR BAIRD of Lennoxlove, Haddington.
 Rev. W. BEVERIDGE, U.F. Manse, New Deer, Aberdeenshire.
 ROBERT HUME BRODIE, South Park, Biggar, Lanarkshire.
 JAMES ALEXANDER BUTTL, 7 Queen Street.
 CLARENDON HYDE CRESWELL, Library, Royal College of Surgeons,
 Edinburgh.
 LOUDON MACQUEEN DOUGLAS, F.R.S.E., 3 Lauder Road, Edinburgh.
 PATRICK NEILL FRASER, Rockville, Murrayfield.

ANGUS GRAHAM, Skipness, Argyll.
 G. A. HARRISON, Warrander, Murrayfield.
 Miss ELIZABETH SEARS HARROLD, Westover, Virginia, U.S.A.
 GEORGE ERSKINE JACKSON, W.S., Kirkbuddo, Forfar.
 H. B. MACKINTOSH, Redhythe, Elgin.
 J. N. WILFRED PAUL, B.A., M.R.E.I.S., Rector, Grammar School, Alwar,
 Rajputana, India.
 A. WEBSTER PEACOCK, Architect, 140 Princes Street.
 J. MURRAY REID, 14 Murrayfield Drive.
 J. HARVEY SHAND, W.S., 38 Northumberland Street.
 Rev. GUSTAVUS AIRD SIM, Valetta, Malta.
 PERCY R. STEVENSON, 5 North Charlotte Street.
 THOMAS STEVENSON, Dechmont View, Sandyhills, Shettleston.
 FRANK SYKES, Lotde Villa, New Barnet, Herts.
 JAMES THOMSON, The Cedars, Fortisgreen Road, East Finchley, London,
 N.
 G. P. H. WATSON, 5 Morningside Park, Edinburgh.
 Major JAMES BRUCE WILKIE-DALYELL of Foulden, Berwick-on-Tweed.
 Rev. THOMAS WILSON, B.D., The Manse, Stow, Midlothian.

The Secretary read the following list of the Members deceased since the last Annual Meeting :—

ROBERT BRUCE ARMSTRONG, 8 Randolph Cliff.
 PERCY BATE, Curator of the Art Gallery and Industrial Museum, Aberdeen.
 The Right Hon. LORD ARCHIBALD CAMPBELL, J.P., D.L., Coombe Hill
 Farm, Kingston-on-Thames.
 RALPH DUNDAS, C.S., 16 St Andrew Square.
 Major JAMES FARQUHARSON, Caledonian United Service Club, Edinburgh.
 Rev. John Ferguson, D.D., The Manse, Linlithgow.
 Rev. JAMES FLEMING, M.A., Minister of Kettins.
 BAXTER GRAY, Springbank, Broughty Ferry.
 NEIL BALLINGAL GUNN, F.I.A., F.F.A., Manager and Actuary of the
 Scottish Widows' Fund and Life Assurance Society, 5 Drumsheugh
 Gardens.
 GEORGE W. HILL, 6 Princes Terrace, Dowanhill, Glasgow.
 HENRY W. HOPE of Luffness, Aberlady.
 Sir GEORGE REID, R.S.A., LL.D., Hillylands, Oakhill, Somerset.
 Rev. JOHN M. ROBERTSON, D.D., Minister of St Ninians, Stirling.

EDWARD DOUGLAS THOMSON, Chief Clerk, General Post Office, 7 Walker Street.

SIR JOHN BATTY TUKE, M.D., LL.D., 20 Charlotte Square.

Rev. W. NEVILLE USHER, Wellingore Vicarage, Lincoln.

WILLIAM WEIR of Kildonan, Adamton, Monckton, Ayrshire.

The meeting resolved to record their sense of the loss the Society had sustained in the deaths of these members.

Mr R. Scott-Moncrieff, Secretary, read the following Report on the progress and work of the Society during the past year :—

<i>Membership.</i> —The total number of Fellows on the roll at 30th	
November 1912 was	730
At 30th November 1913	731
<hr/>	
being an increase of	1

There were 32 new members added to the roll during the year, while of the old members 17 died, 5 resigned, and 9 allowed their membership to lapse.

Satisfactory though this membership may be, there is no reason why it should not be increased, if Fellows will but be at the slight pains to bring to the notice of those of their acquaintances who take a patriotic pride in the past of their country the advantages that the Society offers by the opportunity which its *Proceedings* hold out for the recording of fresh discoveries and the collation of previously existing records, and by their publication and distribution to those who may not themselves be contributors. Among archaeological records our *Proceedings* occupy a worthy place, and the larger the number of our Fellows who will bring archaeological occurrences to the notice of the Society wherever they occur throughout Scotland, the more likely is that position to be maintained.

Proceedings.—An advance copy of the *Proceedings* for the past year is on the table, from which it will be seen that the number of papers read at the meetings of the Society was 26, being 4 less than the number read in the preceding year. Classifying the papers on broad lines, it may be said that 13 deal with prehistoric and 13 with historic subjects. Further classification is difficult owing to the diversity of the subjects dealt with. The Rev. Odo Blundell contributes a further paper on Artificial Islands, embodying the result of his latest examinations of these interesting structures, and Mr Harry R. G. Inglis gives us a second paper on the early roads and bridges of Scotland, the subject which gave rise to so much newspaper correspondence last year. The Rev. Mr Hewison furnishes most interesting notes on the Runic Roods of Ruthwell and Bewcastle, and the Roman Fort at Newstead renders us still another article on some objects found therein hitherto undescribed. To approach nearer to our own times, we have two papers dealing with Edinburgh Castle and one on Dunvegan Castle and its romantic contents, while Inverkeithing furnishes a paper on the humbler but no less interesting dwelling of the mediæval burghess.

Amongst the papers dealing with articles unearthed by chance, attention must be drawn to that describing the hoard of ornaments, implements, and Anglo-Saxon coins found at Talnotrie, Kirkcudbrightshire, by Sir Herbert Maxwell, and to a paper by Mr Gilbert Goudie on an armlet of the Viking period, which was discovered some years ago in Shetland, but which has only this year found its way to the Museum.

Turning to ecclesiastical antiquities, we have a paper by Mr Eccles on the Church Bells of Linlithgowshire, and an interesting communication by the Right Rev. Bishop of Ossory on a thirteenth-century Papal Charter granted to the Abbey of Kinloss.

We have again to thank Mr Alan Reid for another contribution towards our Church Yard Memorials. The value of the information

which is thus being collected and stored will be enhanced when the time is ripe for a paper collating the facts so laboriously obtained and for deducing therefrom the lines upon which the art of the Church Yard has developed.

Excavations.—The Society has contributed during the year to excavation work undertaken by Dr Watson upon the forts in Glenlyon, by Dr Macdonald on a pottery kiln adjacent to the Roman fort at Mumrills, and by Mr A. O. Curle upon a vitrified fort at Rockcliff, Dalbeattie. The results of their labours will be embodied in Reports which will be submitted to the Society during the coming year.

The Museum.—The additions to the Museum during the year ending 30th November 1913 have been 116 by donation and 110 by purchase. The articles acquired by donation have been numerous, and include the collection of Northumbrian relics from Talnotrie already referred to, two oval brooches and other Viking relics from Oronsay, a Viking sword from Dumfriesshire, a bronze rapier blade from a fort in the Stewartry of Kirdendbright, and a mould for casting flat bronze axes; while of the articles acquired by purchase, in addition to the gold armlet already referred to, two penannular gold armlets, the matrix of the seal of the priory of Cupar Angus, and a pair of Viking brooches and other relics from a Viking grave in Caithness call for individual mention. It is gratifying to be able to record so many donations to the Museum, especially of objects of value, and it may not be out of place here to remind the Fellows of the Society of the extent to which the National Collection is dependent for its increase on their public spirit and generosity, especially since competition for the acquisition of all objects of antiquity year by year becomes keener, while the modest sum allowed to Scotland for the purchase of relics remains unaltered. It may be as well to state that the Museum exists for the illustration of Scottish History as well as Archaeology.

The additions to the Library have been 153 books and pamphlets by donation and 22 by purchase, and the binding of 77 volumes has been overtaken.

Officials.—By far the most important change that has taken place for many years in relation to the Museum and to the Society occurred on 31st March last, when Dr Joseph Anderson, who had been the Keeper of the Museum and Assistant Secretary of the Society for the last forty-three years, retired from both his posts. The official announcement of his resignation was made by Lord Guthrie at the Meeting of the Society upon 10th March, when occasion was taken to refer to the unique position occupied by Dr Anderson as an archaeologist and to the debt which all archaeologists and the Fellows of this Society in particular owed him. It is unnecessary to refer further in this Report to the loss which the Society has thus sustained, as Lord Guthrie's remarks will be found *in extenso* on pages 334 to 340 of the forthcoming volume. It is only necessary to add that the Society has been fortunate enough to retain Dr Anderson's services as Editor of their volume of *Proceedings*, which will continue to appear, as it has done for so many years, under his careful and skilful supervision.

While the Society have to be consoled with on the loss of the services of Dr Anderson, they have at the same time to be congratulated on having secured Mr A. O. Curle as his successor. Mr Curle, in addition to a hereditary and natural bent towards matters archaeological, has had the advantage of an intimate acquaintance with his predecessor and his predecessor's scientific methods, and has further enjoyed a unique opportunity, as Secretary of the Royal Commission on Ancient Monuments, of exercising his talents in antiquarian research of every kind. When it is added that Mr Curle has had a thorough business training and is a capable administrator, the Society will realise that in him they have found the man in Scotland best

capable of successfully carrying on the high tradition established by his predecessor.

At the close of this year the Society loses the services of its President, Sir Herbert Maxwell, whose term of office under the Society's Constitution then terminates. Sir Herbert Maxwell was first elected to the post which he has filled with so much acceptance in 1900 upon the death of the Marquess of Lothian. He was re-elected in 1903 and again in 1908, so that he has been in office for the long period of thirteen years. It was only after considerable pressure that Sir Herbert allowed his name to be brought before the Society on the occasion of his last election, and under these circumstances the Council felt that it would be unfair, however much they might desire it, to again press him to accept nomination for election as President this year. The Society, as a whole, is well aware of the debt which it owes to Sir Herbert Maxwell as an Archæologist and a very generous donor to the National Museum. The Members, however, are perhaps not so well informed of what they owe to him as a business man. His advice on all occasions was of value, but his knowledge of Departmental work made it more particularly so when the Council were negotiating with Government Officials. Not only was he able on such occasions—and they were many—to advise the Council judiciously, but he was also able to back his suggestions in influential quarters in a way that it was open to no other Member to do. It is largely due to his influence that the National Museum of Scotland occupies the position that it does, for it was his constant endeavour to obtain from Government the same treatment for it as is meted out to similar institutions in England and Ireland. Although he has failed in accomplishing this, he has, at least, the satisfaction of knowing that but for his efforts Scotland would have been in a much worse position than it is.

Rhind Lectureship.—The Rhind Lectures were delivered this year by Dr George Neilson, his subject being "Some Aspects of Scottish

Feudalism." The next course is to be delivered by Dr W. K. Dickson on "The Development of Writing and Printing in Western Europe."

Thereafter, Mr D. Hay Fleming, LL.D., rose and addressed the Meeting, drawing attention to the omission from the Secretary's Report of any reference to the recent action of the Council in communicating to the Board of Trustees a desire that the National Museum should be opened to the public on Sunday. The Chairman having interposed, pointed out that although he was willing to hear any remarks Dr Hay Fleming had to make in regard to this matter, any motion without previous intimation would be out of order. Mr James Mackenzie accordingly moved and Mr James Urquhart seconded that the Meeting be afterwards adjourned till Monday, 15th December, at 4 p.m., so as to allow of the following motion, of which Dr Hay Fleming then gave notice, being discussed and voted on :—

"In the opinion of this General Meeting, the National Museum of Antiquities of Scotland should *not* be opened on Sabbath, and the Council should consider the advisability of opening it on the evenings of other days in summer."

This motion having been unanimously agreed to, the other business of the Meeting was then proceeded with.

Mr Notman, Treasurer, made the annual statement on the Society's funds, which was ordered to be printed and circulated among the Members, and on the motion of the Chairman a hearty vote of thanks was accorded to Mr Notman for his services.

The Meeting, thereafter, on the motion of Professor Bryce, seconded by Lieut.-Colonel Sir Alexander M'Hardy, approved of the following resolution to be engrossed in the Minutes regarding the retiring President, Sir Herbert Maxwell :—

"That the Society record in the Minutes of this—the last Meeting at which Sir Herbert Maxwell will occupy the Presidential Chair—their sincere thanks for the support and encouragement

which he has afforded to the work of the Society during his tenure of the Presidency ; their high appreciation of his services to Scottish Archæology, and their deep sense of gratitude for his sustained generosity as a donor to the National Collection."

At the adjourned Meeting, held on Monday, 15th December, the Hon. John Abercromby, President, in the chair, Dr Hay Fleming moved the motion for the consideration of which the Anniversary Meeting had been adjourned, viz., that—

" In the opinion of this General Meeting, the National Museum of Antiquities of Scotland should *not* be opened on Sabbath, and the Council should consider the advisability of opening it on the evenings of other days in summer."

The motion was seconded by Mr W. T. Oldrieve, a member of the Council. The Hon. Lord Guthrie moved the previous question, and, on a division being taken, 43 voted for Lord Guthrie's motion and 24 for Dr Hay Fleming's. Thereupon Dr Hay Fleming, for himself and on behalf of those who adhered to him, intimated a dissent and protest.

The text of Dr Hay Fleming's " Dissent and Protest " will be found at p. 431.

MONDAY, 8th December 1913.

The Hon. JOHN ABERCROMBY, President, in the Chair.

A Ballot having been taken, the following were duly elected Fellows :—

Rev. WILLIAM EDGAR, 4 Belmar Terrace, Pollokshields, Glasgow.
Rev. JOSEPH WHITESIDE, M.A., Helsington Vicarage, Kendal.

The following Donations to the Museum and Library were laid on the table, and thanks voted to the Donors :—

(1) By GEORGE AUCHMUTY, Craighead Farm, Crail, through
JAMES URQUHART, F.S.A. Scot.

Remains of an Urn of food-vessel type, found in a cist near Danes' Dyke, Craighead Farm, Crail. The remains of the Urn consist of the upper portion and part of the base, the former measuring $5\frac{1}{2}$ inches in diameter over all, and the latter, when complete, some 3 inches. There is a groove immediately below the rim, and beneath it five pierced projections symmetrically placed at the upper edge of the bulge of the vessel. The ornamentation consists of horizontal impressions of a twisted cord, and double vertical impressions at each projection. The upper surface of the rim is concave and also ornamented with three lines of cord impressions.

The human remains from the cist have been examined by Professor T. H. Bryce, and the following is his report upon them :—"The remains from this cist comprise a small part of the skull, one half of the mandible, the axis vertebra, a small part of the hip-bone, the two humeri, one ulna, the two femora, and the two tibiae. The bones are unburnt, and are much broken. There is too little left of the skull to permit of any conclusion as to its form. The long bones are delicate, and the muscular markings are slight, so that there is some probability

that the skeleton is that of a woman. All the epiphyses are united, so that she was of full adult age. The stature cannot have been greater than 5 feet 4 inches or 5 feet 5 inches. There is none of the antero-posterior flattening of the femur known as platymery, nor of the lateral compression of the tibia called platynemia, which are common in prehistoric skeletons. The femur shows in its lower third an unusual degree of backward curvature, and the head of the tibia is somewhat retroverted as if a bent position of the knee had been habitual. Among the human bones there is a fragment of the humerus of a sheep."

(2) By J. CORRIE, F.S.A. Scot.

Small Polisher of white quartz, having one face rubbed down to a convex surface, found on the site of the Roman Fort at Newstead.

(3) By NEIL BAN M'NEILL, Oronsay, through SYMINGTON GRIEVE, F.S.A. Scot.

Two oval bowl-shaped Brooches of Brass, a Pin of Bronze or Brass with a swivel ring in the head, a cylindrical object of bone, and a pair of Iron Shears, from a Viking burial in Oronsay. [See the subsequent communications by Mr Symington Grieve and Mr James Curle.]

(4) By the Rev. J. PATULLO, The Manse, Morham.

A Whorl decorated with concentric rings, and a fragment of Flooring Tile decorated with a *fleur de lis* in relief.

(5) By DAVID TAIT, Geological Survey.

A ring Brooch of Brass, $1\frac{1}{4}$ inches in diameter, found on the Island of Raasay.

(6) By JAMES HOUSTON, Marchfield, Dumfries.

Rapier-shaped Blade of Bronze, $18\frac{1}{4}$ inches in length, found, with five or six others, in the ditch of a circular earth-work at Drumcoltran,

Parish of Kirkgunzeon, Stewartry of Kirkcudbright. [See the subsequent paper by Mr A. O. Curle.]

(7) By JOHN BELL, of Torbeckhill.

Double-edged Sword of Viking type, $24\frac{1}{2}$ inches in length, but wanting part of the point end, with a tri-lobed pommel and recurved guards, found at Torbeckhill, Ecclefechan. [See the subsequent paper by Mr A. O. Curle.]

(8) By R. OLIVER HISLOP.

Silver Penny of Alexander III., from the Mellendean Hoard.

(9) By MRS MAXWELL MACGREGOR, Edinburgh.

Egyptian Ushabti Figure of date about 560 B.C.

(10) By JAMES LYLE, F.S.A. Scot.

Pottery Plaque with Bacchanal group, said to be Dunbar ware.

(11) By W. BALFOUR STEWART, Birkenhead.

An old Meat Jack from Orkney.

(12) By Miss BALFOUR, Whittingehame.

A Bottle of thick brown glass, $9\frac{1}{4}$ inches in height, with a bulbous body and widely everted mouth, from Luggate Burn, Haddingtonshire.

A brass Lantern with horn lights, inscribed "P. Fairbairn, Cove, 1750," said to have been used as a beacon light at Cove, Cockburnspath.

(13) By the Right Hon. A. J. BALFOUR, Whittingehame.

A Mould of micaceous schist for casting a flat bronze axe, found in a peat-bog between Blar-na-Bitha and Scardroy Loch, Strathconan, Ross-shire; also two Castings from the mould.

(14) By the Rev. D. CARMICHAEL, The Manse, Reay.

A small Iron Cross, $1\frac{1}{2}$ inches in height, and $1\frac{1}{2}$ inches across the arms, and the remains of two or three Buckles of Iron, found adjacent to the site of a Viking burial in Reay.

(15) By EDWIN H. FRESHFIELD, M.A., the Author.

Cellæ Trichoræ, and Other Antiquities in the Byzantine Provinces of Sicily, etc. Vol. i. 8vo. 1913.

(16) By JOHN E. SHEARER, F.S.A. Scot., the Author.

The Battlefields around Stirling. 8vo. 1913.

(17) By DAVID MURRAY, LL.D., F.S.A. Scot., the Author.

Robert and Andrew Foulis and the Glasgow Press. 8vo. 1913.

(18) By the MASTER OF THE ROLLS.

Calendar of the State Papers relating to Scotland and Mary Queen of Scots, 1547-1603, vol. vii.; Calendar of State Papers, Domestic Series, 1678; Calendar of the Fine Rolls, vol. iv., Edward III., 1327-1337; Calendar of State Papers, Foreign Series, 1583; Calendar of State Papers, Spanish, 1547-1549; Calendar of Patent Rolls, Henry III., 1266-1272; Calendar of Inquisitions Post Mortem and other Analogous Documents, vol. viii., Edward III.

(19) By HUGH S. GLADSTONE, F.S.A. Scot.

Addenda to the Statistical Account of Dumfriesshire and Galloway, by ROBERT RIDDELL. 12mo. 1913.

(20) By the Rev. JAMES SMITH, B.D., F.S.A. Scot., Minister of St George's-in-the-West, Aberdeen, the Author.

Genealogies of an Aberdeen Family, 1540-1913. 8vo. 1913.

- (21) By WILFRED AIRY, B.A., M.Inst.C.E., the Author.
On the Ancient Weights of Britain. 8vo. 1913.
- (22) By the CURATOR OF NORWICH CASTLE MUSEUM.
City of Norwich Annual Report of Norwich Museum Association.
- (23) By JAMES B. SUTHERLAND, F.S.A. Scot., the Author.
An Eighteenth-Century Survival: The Wagering Club. 1775.
8vo. n.d.
- (24) By ROBERT MURDOCH LAWRENCE, the Author.
The Pedigree of the Aberdeenshire Lawrances. 4to. 1912.
- (25) By KENNETH MACDONALD, F.S.A. Scot., the Editor.
Antiquarian Notes regarding Families and Places in the Highlands.
By CHARLES FRASER MACKINTOSH, F.S.A. Scot. 8vo. 1913.
- (26) By the SUPT. OF GOVERNMENT PRINTING, Madras.
Descriptive Catalogues of the Sanskrit MSS. in the Government
Oriental MS. Library, Madras, vols. xiv. and xv.
- (27) By JAMES MACLEHOSE & SONS, the Publishers.
The Early Chronicles relating to Scotland. By Sir HERBERT
MAXWELL. 8vo. 1913.
- (28) By HIS HIGHNESS THE PRINCE OF MONACO.
La Pasioga a Puente-Viesgo (Santander) (Espagne). Par l'abbé H.
BREUIL, le Dr H. OBERMAIER et H. ALCALDE DEL RIO. 4to. Monaco.
1913.
- (29) By the UNIVERSITY OF GLASGOW.
The Matriculation Albums of the University of Glasgow from 1728
to 1858. Transcribed and annotated by the late W. Innes Addison.
4to. 1913.

(30) By WILLIAM GEORGE BLACK, LL.D., the Author.

Glasgow Cross, with a Suggestion as to the Origin of Scottish Market Crosses. 8vo. 1913.

(31) By the UNIVERSITY OF GLASGOW.

Glasgow University Calendar for 1913-14.

The following purchases acquired by the Purchase Committee for the Museum and Library during the Recess, 12th May to 1st December 1913, were exhibited :—

A doubly conical Bead of dark green glass, from Legerwood, Earlston; cylindrical Bead of brown vitreous paste, from Earlston; fragment of a globular knopped Bead of a dark blue glass, from Earlston; fragments of Bracelets of glass, from Caddonlea, Sandyknowe, Maxton, Chesterhall, Bowden, Whitehill, Earlston, and Newstead.

Flint Knives of brown and grey flint respectively, from Birkenside, Earlston, and Whooplaw, Stow. Two Fabricators, viz., from Wantonwalls, Lauder, $2\frac{1}{4}$ inches in length and $\frac{3}{4}$ inch in breadth, and from Kersheugh, Jedburgh, $2\frac{5}{8}$ inches in length and $\frac{1}{2}$ inch in breadth. Flint knives from Bowerhouse, Lauder, and Clackmae, Earlston, respectively.

Spear Head of bronze, $6\frac{3}{4}$ inches in length, with loops, from Castle-craig, Peeblesshire. Rapier Blade of bronze, $13\frac{3}{4}$ inches in length, from Kirkcudbrightshire.

Axe Hammer of porphyritic stone, $4\frac{1}{2}$ inches in length by $2\frac{1}{4}$ inches in breadth and $1\frac{1}{4}$ inches in thickness, from a cist at Burnside Mill, Forfar.

Axe Hammer of Silurian sandstone, $8\frac{1}{2}$ inches in length by 5 inches in breadth and $3\frac{1}{2}$ inches in thickness, and Stone Axe, both from Glasserton, Wigtownshire. Finger Ring of bone, from Whithorn.

Silver Matrix of the seal of the Chapter of Cupar-Angus Abbey;

Matrix of the seal of the Bishop of Dunblane ; Matrix of the seal of Trinity College Church, Edinburgh.

Muller of sandstone from Skigersta Ness, Barvas, Lewis.

Two bowl-shaped Viking Brooches of brass ; Brass Pin, $4\frac{1}{2}$ inches in length, with a movable ring in the head ; a Buckle of brass, and Steatite Whorl ; a Horse's Bit of iron, from Reay, Caithness. [See the subsequent communication by Mr James Curle.]

Trade Tokens—a Perth Halfpenny, 1797 ; Silver Spanish Coin of Charles IV., stamped with the value 5s. and " Payable at Lanark Mills."

Coins—Cork Penny, Edward I. or II., from Fauldhouse, Linlithgowshire ; six Silver Pennies of Edward I. or II., from Mellendean, Roxburghshire.

The following Books for the Library :—

French and English Dictionary, by James Boïelle, B.A. ; English and German Dictionary, Koehler ; Catalogue of Antiquities in the Guildhall Museum, London ; Questions de Chronologie et d'Ethnographie Ibériques, Louis Siret ; Journal of a Tour thro' the North Isles and part of the Mainland of Orkney, MSS. by Rev. George Low ; Glamis, a Parish History, by the Rev. John Stirton, B.D., F.S.A. Scot. ; Bedenken zur Vorgeschichtsforschung von Otto Piper ; Opuscula Archæologica Oscari Montelio ; Præhistorische Zeitschrift ; Atkin's Tokens of the Eighteenth Century, London, 1892.

The following Communications were read :—

I.

ACCOUNT OF SOME SLIGHT EXCAVATIONS AT THE MOTE OF
HAWICK. BY ALEXANDER O. CURLE, DIRECTOR OF THE MUSEUM.

This mote is a conspicuous object on the right side of the railway as one passes out of Hawick. Its situation is on the point of a spur of land which projects out from the higher ground to the westward, and forms the extremity of the watershed between the Teviot and its tributary, the Slitrig. Below it on the haughland above the rivers cluster the houses and mills of the thriving Border burgh, while on rising ground nearer to the mote stands the parish church, itself occupying an ancient site. The field on the lower end of which the mote stands slopes towards the north-east and also to a certain extent laterally from the mote towards the south-east. The mote, in the usual form of a truncated cone, rises steeply from ground level to a height of 28 feet 7 inches on its highest aspect, of 23 feet 7 inches on its lowest, and appears to be entirely artificial in its formation. The summit, which is a circular plat, has a diameter of 41 feet.

Believing that I could discern at several points indications of a trench or ditch around the base, I approached the Town Council with a request that they should cut some sections inwards towards the hillock, and ascertain if my surmise was a correct one. In this they kindly obliged me, and on 6th April 1912 I visited Hawick to inspect the result of the digging done on the previous day. Three very narrow trenches had been dug, one on the higher side towards the south-west, another towards the south-south-east, and a third on the lower ground towards the north-east. A little additional digging revealed the presence of the ditch in each excavation. On the upper or south-west side, it indicated at the surface a breadth of 28 feet 6 inches, and revealed a greatest depth of 7 feet. It had been entirely filled up with soil, and as a portion of a modern glass bottle, and the



Fig. 1. Mote of Hawick, from the South-West.



Fig. 2. Mote of Hawick, view from the South-South-East.

head of a clay pipe, came from the filling at a depth of some 4 feet below the present surface, it was evident that at this point at any rate, the refilling had taken place in comparatively recent times, though all knowledge of the previous existence of the ditch appears to have been lost. The second section made on the south-south-east side was only 14 feet wide and 4 feet in depth at the centre, while the third section revealed measurements similar to the last. The ditch appeared to be flat-bottomed, and from the difference in depth on the higher and lower sides it is evident that the mote had been constructed on a level platform cut out of the sloping ground. The third section, that on the lower side, differed markedly from both the others in that it contained kitchen-midden refuse, consisting of animal bones, some of them split for extraction of the marrow, and numerous fragments of pottery. The discovery of the bones of a horse and of an iron horse-shoe, coupled with the fact that pottery of an early date came to light at this spot at a high level, seemed to point to the disturbance of the deposit by the burial of a horse in the trench at some date subsequent to the occupation of the mote, but, to judge from the condition of the bones, that date was not a recent one. As a relic bed had been located, I widened the original exploratory trench and made a transverse cut westward along the ditch for a distance of 9 feet, with a breadth of 3 feet 6 inches. In this extension the relics appeared all to lie in a deposit covering the bottom of the ditch to a depth of about 1 foot. Numerous fragments of wheel-made pottery were recovered, representing some thirty-six vessels, for the most part cooking pots of hard, unglazed ware, of a buff or grey tint externally, having on the inner surface shades varying from white to pink, according to the colour of the clay wash, or slip, with which they had been treated. The body is hard and well baked, and from the clay having many small particles of stone in it, the surface is rather rough. The sides are as a rule slightly corrugated, much blackened by fire, and thin, varying in thickness from $\frac{1}{8}$ to $\frac{1}{4}$ inch. The bottoms have been flat and show no signs of thumb-marking or

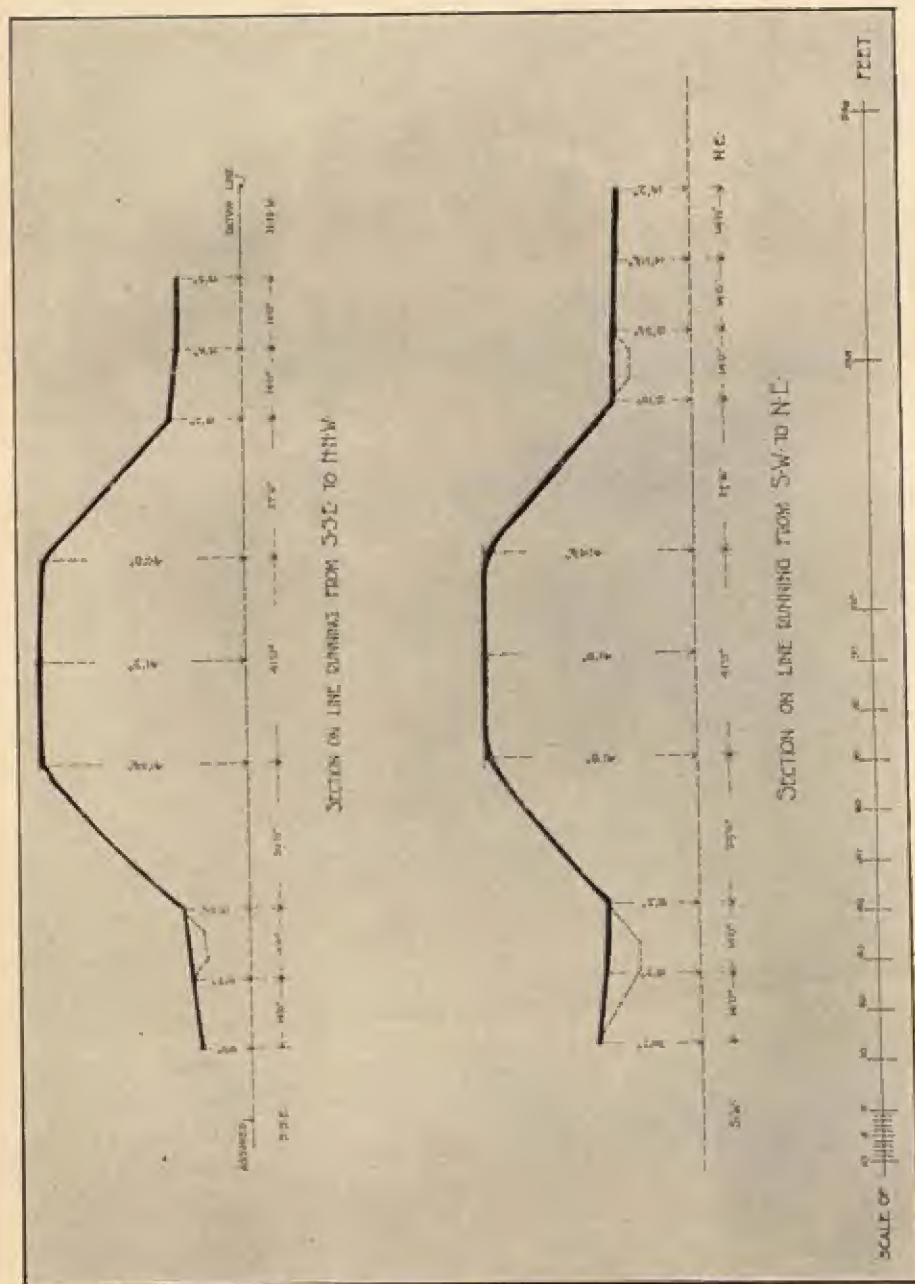


Fig. 3. Moto of Hawick—Sections.

pinching at the edge, as does the pottery of a slightly later period. Two vessels, of which fairly large portions of the rims remain, have an indicated diameter of $6\frac{1}{2}$ inches at the mouth. Fig. 4 shows sections of the rims of these cooking pots. Fragments of glazed earthenware were less numerous. A small triangular fragment,

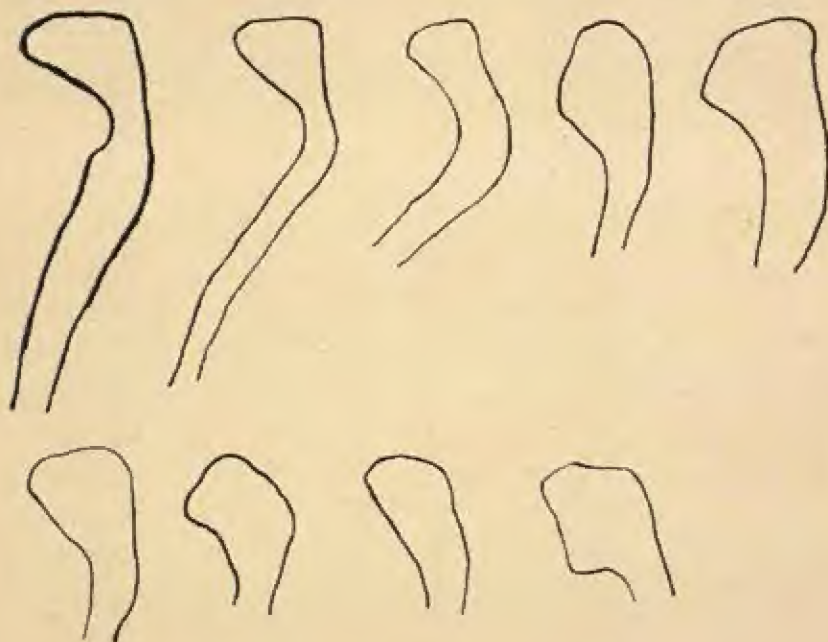


Fig. 4. Sections of Rims of Cooking Pots.

covered with a well-applied brown glaze, is decorated with a series of double incised parallel lines passing around the vessel; one portion of the lip of another pitcher is coated on the exterior with a thick yellow glaze. Both these pieces find analogues at Old Sarum, where a large collection of twelfth- to thirteenth-century pottery has been recovered in the excavation of the Norman castle. The style of

the first of the two pieces above described is represented there by a large brown-handled jar about 13 inches in height, having a greatest diameter of 10 inches, while the yellow ware finds an exact parallel. A shard, brick-red inside, coated externally with a brownish-green glaze, now for the most part weathered off, has been decorated with a wavy applied fillet, $\frac{3}{8}$ inch broad, encircling it, and beneath, parallel oblique rows of small markings made with the impression of a pointed tool or stick.

A bone needle (fig. 5), $4\frac{1}{2}$ inches in length, rounded at the point, and flat by nature where pierced by the eye, was also recovered, and it likewise finds its exact parallel at Old Sarum.

From the very bottom of the ditch came the most important relic of all—a coin, much decayed, but clearly recognisable as a silver short cross penny of the first issue of Henry II. of England (1154-1189). We thus have here fairly conclusive evidence of an Anglo-Norman occupation of a mote hill, in a twelfth-century English coin, and pottery both glazed and unglazed, identical with that which has been recovered from the ruins of the Norman stone-built stronghold of Old Sarum.

The records show that a Norman family of the name of Lovel of old held the barony of Hawick, and a commission appointed in 1347¹ to inquire into the rights of a certain Richard Lovel thereto, found that the said Richard himself and his ancestors had possessed the barony from time beyond memory. It is possible therefore that we have here the mound which sustained the wooden tower of the first of the family to settle in the district. The



Fig. 5. Bone Needle. †.

¹ Bain's *Calendar of Documents relating to Scotland*, vol. iii. p. 275.

proof, adduced hitherto for the Anglo-Norman origin of our mote hills, has been almost entirely derived from literary sources. but it has been deemed sufficient to establish the hypothesis, and now the incontrovertible fact supplied by relics may be regarded as completing the chain of evidence.

Since these results were obtained at Hawick, an hour's excavation on the ditch of a mound at Cadder in Lanarkshire to which a Roman character had been tentatively applied produced several pieces of glazed earthenware of mediæval manufacture. In conclusion, I would add that there is probably no class of ancient site that lends itself to excavation with so little expenditure as the ditch of a mote hill, and not many which will produce more satisfactory products.

It is to be regretted that the Town Council of Hawick could not see their way to allow the complete excavation of this ditch when the preliminary examination had proved so fruitful, but their decision was no doubt due to a commendable desire that this, the most ancient monument which the town possesses, should not be subjected to the slightest risk of deterioration.

The relics found are preserved in the Museum at Wilton Park, Hawick.

For the use of the photographs illustrating the mote, I am indebted to Mr Robert Nisbet and Mr W. P. Gaylor, Hawick.

II.

RUTHVEN BARRACKS, IN BADENOCH. BY MAJOR W. MEYER-GRIFFITH, F.S.A. Scot., F.R.G.S., F.R. Hist. S.

When Sir John Cope, making for Corriearrach Pass, in August 1745, found himself outmanœuvred by Prince Charles Edward, he turned aside from Wade's western road at Blarigg Beg, not far from Dalwhinnie, and marched north to Ruthven, centre of the strongly Jacobite Badenoch district, where General Wade had constructed, in 1737, on the site of an old castle, fortified barracks at the junction of two of his military roads.

The ruins of Ruthven Barracks stand to this day, and consist of two blocks of buildings (see the plan, fig. 1), with an open space between them, possibly once walled in. The buildings face south-east and north-west, and one of the enclosures, containing the barrack square and barracks proper, is far more imposing in every way than the other. The whole is built on a grassy mound (fig. 2) of some 150 feet in height. This mound is probably artificial, but is of very great age, a castle (once residence of the "Wolf of Badenoch") having crowned its summit from remote antiquity. The top of the mound is irregular in shape, and from this it results that the larger enclosure is not quite a square, its sides measuring roughly 27, 26, 26, 24 yards in length. Loopholed towers at the east and west corners guard the two entrance gateways, so placed that they can enfilade the south-east and north-west walls, in the centre of each of which the gateways are pierced. The walls are also loopholed, and arches all round them serve the double purpose of recessing the *meurtrières* and of providing a platform for the sentry walk. The western tower, practically square, has windows and a chimney, and was probably used as a guard-room. The eastern tower, though similar, has, owing to the unsymmetrical shape of the whole building, as mentioned above, its south-east and

GROUND PLAN
or
RUTHVEN BARRACKS.
BADENOCK.

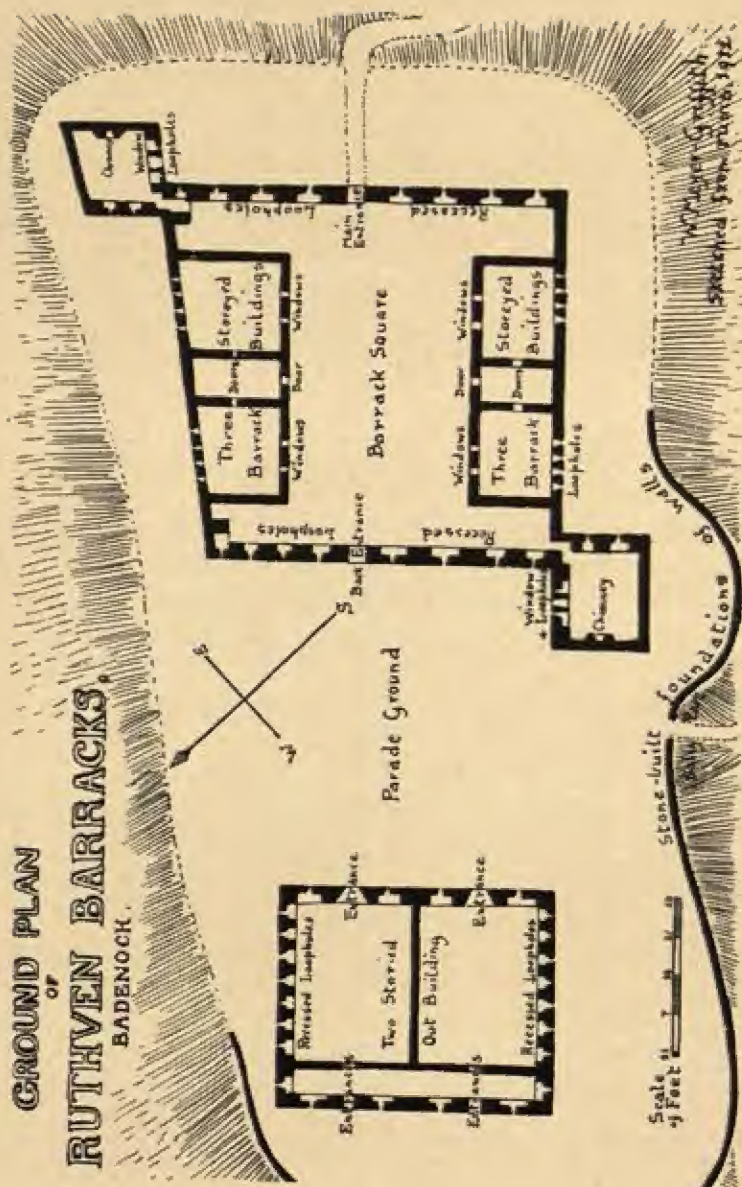
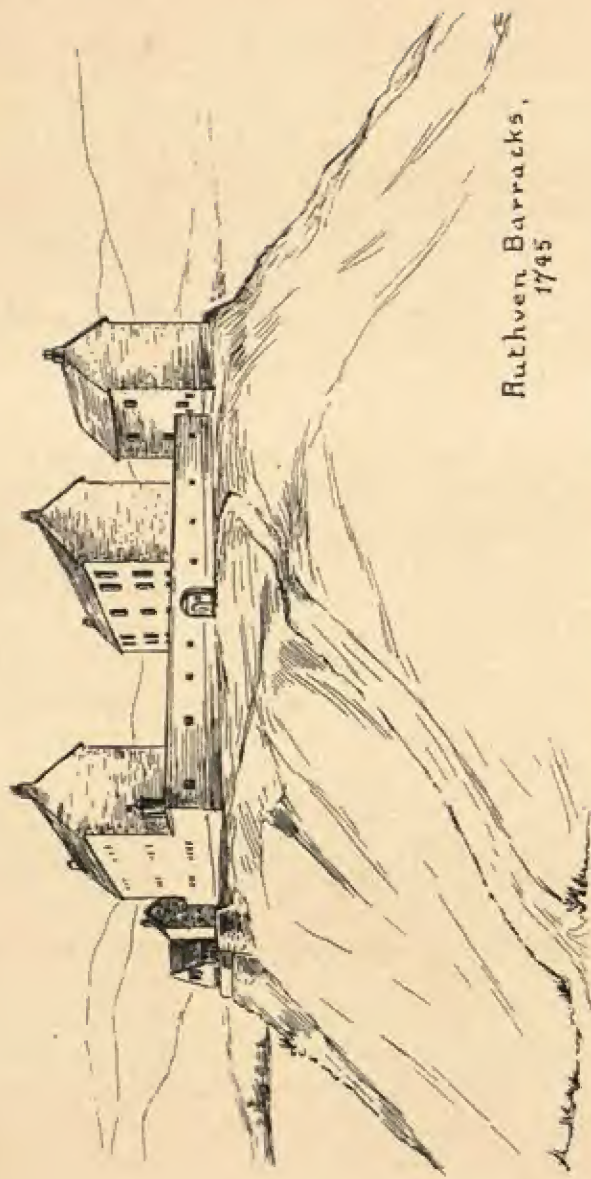


Fig. 1. Ground Plan of Rathven Barracks, Badenoch.

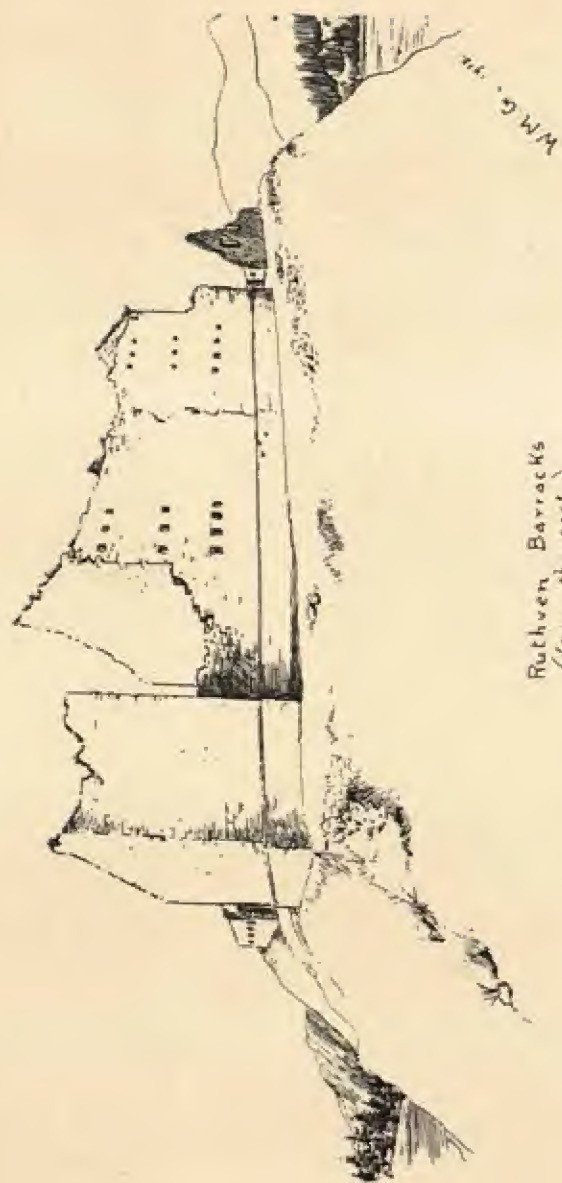


Ruthven Barracks,
1745

Fig. 2. Ruthven Barracks, Badenoch, in 1745.

north-east walls acute-angled. Forming the side walls of the barrack square are three-storeyed buildings, loopholed outwards, but having windows giving on to the square. Each block is divided into three compartments, with doors leading into the central house. As there is no trace of a governor's lodging, which in Forts George and Augustus was built over the main entrance, it is probable that one of these compartments was used for that purpose and another utilised as officers' quarters. There are no signs now of the stone sentry-boxes so prominent on the bastions of Edinburgh Castle and Fort Augustus. They may have been battered down during the Jacobite siege. Even more striking is the absence of any sort of gun-emplacement, which goes to prove that Ruthven was essentially a barracks rather than a fort. There are no bastions, no glacis, no lunettes, and the shape of the roofs, even those of the corner towers, is that of an ordinary house. This is the more odd, as Forts William, George, and Augustus were fortresses first and barracks after; and Wade, who built them all, must have known that sooner or later Ruthven would have to stand a siege. To reach the second block of buildings one leaves the barrack square by the north-west gate, and crosses an open space, probably once the parade ground. This block consists of a two-storey house with four entrances, two facing the main barracks and two looking towards Kingussie, or north-west. Entering by the latter, one is faced by a blank wall, pierced by two doorways. There are windows in the upper storey and recessed loopholes below. The existence of this wall within a wall seems to indicate the possibility of this building being used as a powder magazine. A second blank wall down the centre divides the house into two apartments, but to get from one of these into the other one has to go outside, or rather into the space between the outer shell and inner wall. If one room was the magazine, the other may have been the quartermaster's store.

This completes the survey of Ruthven Barracks as it stands, a striking, but by no means beautiful, ruin, at the present day (fig. 3);



Ruthven Barracks
(from the east)

Fig. 3. View of Ruthven Barracks, from the East, 1913.

highly interesting to the military student, however, as, of all Wade's fortified forts, it alone shows anything of its original size and form.

When Cope, as we have already seen, halted near the barracks on 27th August 1745, he withdrew the garrison to reinforce his depleted army, leaving there only a sergeant and twelve men in charge. Prince Charles, having decided to ignore Cope and march south on Edinburgh, missed Ruthven, so for a short time the sergeant and his slender garrison were left undisturbed. In September, however, his peace was rudely broken by 200 clansmen, who sat round the barracks for some weeks, but, having no guns, could make no impression on it. It is certainly surprising that 200 wild Highlandmen should not have been able to rush and escalate the place—since its thirteen defenders could not be everywhere at once; but either the sergeant and his merry men were inordinately wily or the clansmen lacked initiative, for it was not until March 1746 that the position was captured by a Jacobite army with cannon, after a three-days' bombardment. The Jacobites then burned it to the ground before they marched north to their doom at Culloden. After Culloden, Ruthven was assigned as the rendezvous of the clans, and there, receiving the order to disperse, in the Prince's own hand, the Jacobite nobles (including Lord George Murray, Lord Ogilvie, the Duke of Perth, and Lord John Drummond) took a sad farewell of one another before—homeless exiles for the Stewart cause—making their way in twos and threes to the coast and safety.

III.

AN ACCOUNT OF THE EXCAVATION OF THE BROCH OF AYRE,
ST MARY'S HOLM, ORKNEY. By A. SUTHERLAND GRAEME,
F.S.A. Scot.

Locality.—To the west of the village of St Mary's Holm lies the Loch of Ayre, so called from the "Ayre" or raised beach that divides it from the sea to the south. The broch is situated on the north bank of the loch and between the main Kirkwall road on the east and a small burn which flows into the loch on the west. Prior to excavation the spot was marked by a low mound, rising to some 10 or 12 feet above the surface of the water, and oval in shape. The major axis lay approximately east and west, and was about 200 feet long. The minor axis measured about 150 feet. That it concealed the remains of some building had long been considered probable, the chief evidence—besides its characteristic shape—being the very stony state of the bed of the loch which circled the mound from south-east to south-west, at an average radius of 250 feet from the centre of the mound.

Excavation.—Work was commenced in December 1901, the first trench being made from the east. A slight natural depression led directly to the summit of the mound, and it was anticipated that by this means the main wall would be struck with but little work. The conclusion that the highest part of the mound marked the centre of the building was erroneous, and it was found, naturally enough, that it marked the highest portion of the main wall. At about 15 feet from the adit a wall was encountered, of which there remained only a course or two, showing strong signs of fire. The doubts about its being the main wall were confirmed by its taking a concave turn in a south-east direction. It was, however, traced out with the result as shown on the plan, the wall being marked A (fig. 1). Meanwhile a trench had

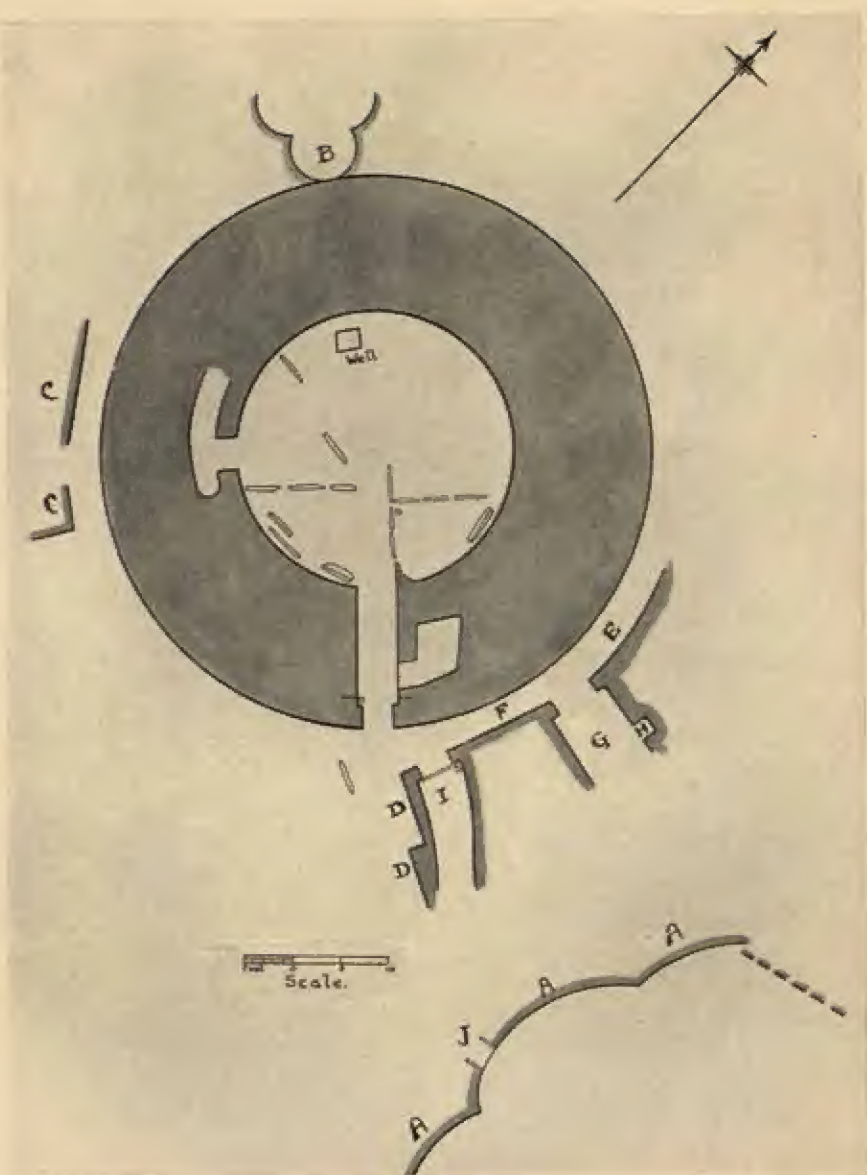


Fig. 1. Plan of the Broch of Ayre, St Mary's Holm, Orkney.

been started from the south-south-east, but was given up at first, as it seemed probable that it would only lead up to another part of wall A. This was afterwards found to be an erroneous opinion, as its curvature was eventually traced out.

A low portion of the mound on the north-west side seemed promising, but after a trench a couple of yards long had been driven, a low wall, obviously of a secondary nature, was encountered. This was developed, and a structure of apsidal shape laid bare. This is shown at B, the radius of the apse end being about 3 feet 6 inches, and the distance between the horns about 2 feet 6 inches.

Another attempt was then made from the north, and the main wall at length reached. It was here about 3 feet 6 inches high, and was traced in a westerly direction without any immediate increase in height being noticed. This trench terminated at the back of the wall B, whose apsidal end was found to abut on the main wall.

Entrance.—As it was anticipated that the entrance would be found on the western side, another approach was cut on the southern side of the structure at B. The main wall was again traced round, and at its lowest point was found to be only about 2 feet 6 inches high. This was on the south-west side, where there were some signs of the wall being lined with a casing of masonry about 9 inches to 1 foot thick. The structures shown at C were passed, and the entrance was eventually found on the south-east side. For facility in handling the spoil the second adit was cut through and a secondary wall found at D. Three standing stones were found grouped outside the entrance, but as the exact localities of two were not noted, only one is shown on the plan. Meanwhile the wall was being followed from the cutting on the north side, and the complete circle was eventually opened out, the subsidiary walls at E and F being discovered during the process. The main wall between the south and east was about 5 feet high. A large slab, which had evidently been the lintel stone of the doorway, was found in halves in the entrance. The jambs

were 3 feet 6 inches apart and about 2 feet deep (fig. 2). Inside the entrance opened out to 4 feet 6 inches. On the left hand the usual recess was found in which the door-bar was housed. Set in the ground in the left re-entrant angle of the door jamb was found a socket stone and pivot stone, more or less spherical, upon which the door which closed the entrance revolved. Opposite the bar recess, and on the right-hand wall, a socket hole was found, into which the end of the bar slid when in use. On the right wall of the entrance the usual guard chamber was found. It was raised about 1 foot above the level of the entrance passage, and was rhomboidal in shape, measuring roughly 5 feet by 4 feet. The entrance passage was paved, and it was found that the slabs covered a drain built of stone in the shape of an inverted round arch about 9 inches in diameter. When first opened it was still conveying water, but subsequent operations outside the walls consolidated the loose earth into which it drained, and so stopped the flow.

Internal Area.—The internal area revealed the usual characteristics of the brochs. There were a number of standing stones (fig. 3) or partition slabs, the localities of some being as shown on the plan. Opposite the entrance, near the further side of the interior court, a well was found in which water was still standing, and the remains of two steps lead down to the water surface. The well was roughly 2 feet square, and was partly roofed in with a flat slab.

The usual stairway was not at first in evidence, owing to the masonry at its entrance being very much broken. There was, however, a space which did not appear to have been built over on the south-west side of the interior wall, and this was eventually shown to be the doorway leading to the stairs. These seemed to lead down below the floor level of the broch, terminating in a cavity roofed by overlapping stones. The width of the stairway was about 2 feet 6 inches. The main wall was here about 4 feet in height. There were traces of three steps, each about 9 inches deep and 1 foot wide. Part of the main



Fig. 2. View of Entrance from outside.



Fig. 3. View in internal area showing Partition Slabs.

wall on the north-east side appeared to be slightly recessed, so that its curvature was to a shorter radius than that of the principal wall. There were here many signs of fire. Part of the main wall curved round on the right-hand side of the entrance, and was built out a little way on the top of the standing stone, as shown in the plan. Three or four socket stones were found near these slabs in various places.

After the interior had been cleared the passage G was traced for a short distance, the inset H proving to be of the nature of a cupboard.

No further work was done until June 1909, when the passage I was investigated, and found to proceed in a winding direction into an open chamber 9 feet wide. On the right-hand side of this the original wall was very low, and a second wall had been built above and slightly behind it, so that a bench was left. Near the centre of the chamber was found a curious grouping of flag stones. The chamber concluded in a small tunnel, which led out through the wall A, the sides being guarded with slabs, and it was roofed with flags, the hole being about 2 feet square.

This completes the record of excavation so far, but at some future date it is hoped to continue the examination of the outworks.

GENERAL REMARKS.

At first sight this broch does not appear to be characterised by the isolated position that is the feature of nearly all brochs. It may, however, be fairly presumed that the "Ayre," which now separates the sea from the loch, was thrown up at a later date, and that the broch therefore originally stood on the seashore, in common with all other brochs in the neighbourhood. The low-lying ground behind it in the immediate neighbourhood of the burn would probably be less efficiently drained than it is now. This would afford the degree of impregnability that seems to have been sought after in fixing a site for one of these buildings.

In common with most other brochs, iron implements were found

within the walls of this building. By the discovery of a spearhead in the guard chamber, it is evident that weapons of iron were in use before the demolition of the broch. Of more interest is the mass of conglomerate which was found amid a bed of clay on the floor level, and surrounded with much broken pottery. The adjacent part of the main wall showed signs of fierce fire, and the fragments of pottery fused into the conglomerate point to some attempt to smelt either the metal or the ore.

In common, too, with most other brochs, numerous traces of charcoal were found. This in itself does not cast any fresh light upon the broch and its occupation. In the excavation of the passage I (in plan, fig. 1), another, and I believe a new feature, was observed. A section through this passage is given in the Appendix, showing the various layers of material found in it. In the clay composing the lower stratum H several fragments of charcoal were found, showing by their circular section that green wood was in use as fuel at that period. In the stratum of clay D were found extensive traces of peat ash. Thus prior to the demolition of the broch the occupants burnt wood, with which Orkney is known to have been largely covered at some period. After the demolition marked by stratum G, with its debris of stones fallen from the passage walls, the site has been occupied by people who only burnt peat for fuel.

So far as the masonry is concerned, very little work constructed during the secondary occupation has been opened out. Referring to the plan, the apsidal structure B and traces of masonry in the neighbourhood of the wall A are probably the only examples of secondary building, inasmuch as no traces of debris were found in the immediate neighbourhood during their excavation, nor were any signs of occupation, such as clay, fuel, shells, etc., found to extend over the walls.

During the excavation of the broch, the lie of the stones of which the debris largely consisted showed very plainly that the fall had

taken place from a west or south-west direction. This evidence is also supported by the great accumulation of debris on the east side. It is owing to this covering of rubbish that the remains of the outworks have been preserved. The practical absence of outworks on the west side—and there are traces—show that they have been left exposed, and therefore open to weathering and to annexation by those who required the stones for building purposes at a later date.

The leaning and bulging state of the masonry of the outworks on the east side shows that the walls have been subjected to considerable pressure from above, such as would be caused by falling masonry.

The list of animal remains was compiled by Dr Norman Ticehurst, St Leonards-on-Sea, Sussex, and I am much indebted to him for his careful examination and identification of a large quantity of bones and other remains found in the course of excavation.

LIST OF THE RELICS FOUND DURING EXCAVATION.

A. *Iron.*

1. Spearhead, 9 inches long. Found in guard chamber.
2. Spearhead, $7\frac{1}{2}$ inches long.
3. Axehead, $4\frac{1}{2}$ inches long, blade 2 inches wide. Found under turf outside, and on south side of broch.
4. Iron shank imbedded in spherical bone handle, possibly some tool resembling an awl.
5. Mass of conglomerate consisting of burnt clay pottery and iron. Found on floor level, inside and under north wall of broch.

B. *Stone.*

1. Stone vessel, triangular in shape, probably a lamp (fig. 4).
2. Several vessels of mortar type (fig. 4).
3. Top or bottom stone of flat, rotary type of quern.
4. Two top stones of flat, rotary type of quern.
5. Two bottom stones of flat, rotary type of quern.
6. Top and bottom stones of flat, rocking or saddle type.
7. Two socket stones (one of which is shown in fig. 4).



Fig. 4. Lamp of Stone, two Mortar-like Vessels, and Socket Stone.

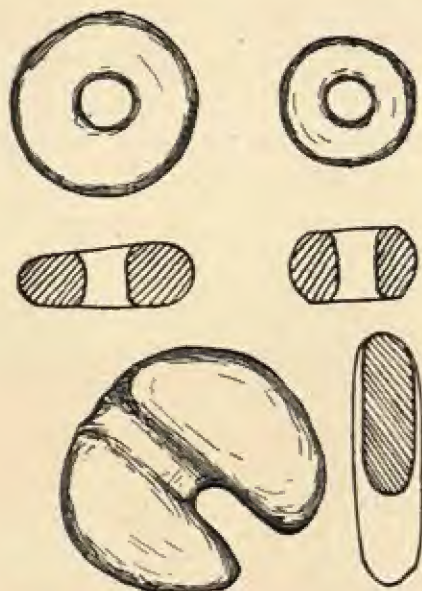


Fig. 5. Two Whorls and Grooved Sinker.

8. Flat circular sinker, perforated in centre; part of circumference bevelled from both sides to a fine edge, 2 inches diameter.

9. Sinker, notched, and grooved across both flat sides, 2 inches diameter, $\frac{1}{2}$ inch thick (fig. 5).

10. Hone, polished with use, 7 inches long, 1 inch wide.

11. Hone, much worn on both surfaces and on its four edges, $2\frac{1}{2}$ inches maximum diameter, $\frac{3}{8}$ inch thick.

12. Hone, $5\frac{1}{2}$ inches in length by 1 inch by $\frac{1}{2}$ inch.

13. Four pounding stones, oblong and oval. Ends much abraded, worn with use.

14. Fragment of pumice, deeply grooved by use, for polishing bone pins.

15. Oval stone, showing polish through use.

16. Wedge-shaped stone, showing abrasion on flat surfaces.

17. Stone whorl, $1\frac{1}{2}$ inches diameter, $\frac{3}{8}$ inch hole, $\frac{1}{2}$ inch thick (fig. 5).

18. Stone whorl, 1 inch diameter, $\frac{3}{8}$ inch hole, $\frac{5}{8}$ inch thick (fig. 5).

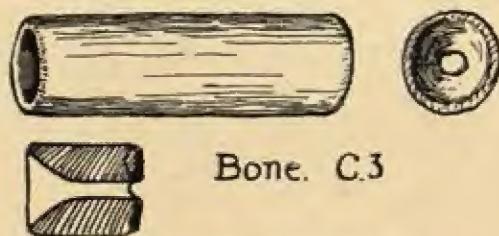
C. Bone.

1. Many pieces red-deer antler, all with cuts upon them.

2. Awl, made from a sheep's leg bone, $3\frac{1}{2}$ inches long.

3. Cylindrical piece of bone, $2\frac{1}{2}$ inches long, $\frac{3}{8}$ inch diameter, drilled longitudinally, and hole counter sunk at one end; highly polished (fig. 6).

4. Handle of red-deer antler, $4\frac{3}{4}$ inches long by 1 inch by $\frac{3}{4}$ inch,



Bone. C.3

Fig. 6. Cylinder of Bone, perforated.

with rounded edges; one end broken. The larger end is drilled and grooved (fig. 7).

5. Bone weaving-comb; teeth broken off short; one corner missing; $4\frac{1}{2}$ inches long, $1\frac{1}{2}$ inches wide at teeth.

6. Fragment of riveted antler. Three holes contain perfect rivets,

1½ inches long, and there is a fourth loose one. Dimensions of fragment, 4 inches by 1½ inches. There are two smaller holes of ornamental character.

7. Fragment of riveted antler, 8 inches long by 1½ inches, containing one rivet 1½ inches long, one 1¼ inches long, and three broken ones.

8. Fragment of bone, 3½ inches, with broken rivet in place.

9. Fragment of bone, 3½ inches, with rivet hole.



Fig. 7. Shaped Pieces of Bone and Antler, perforated.

10. Fragment of bone, 4½ inches long by 1½ inches wide, containing two broken rivets in place.

11. Fragment of bone, 2½ inches by ¾ inch, with two rivet holes (fig. 7).

12. Fragment of bone, 3½ inches by 1½ inches, with four rivet holes, slightly polished (fig. 7).

13. Fragment of bone, 2¾ inches by ½ inch, containing broken rivet (fig. 7).

14. Shaped and ornamented piece of red-deer antler with three rivet holes, 6½ inches long by 1½ inches wide (fig. 7).

15. Shaped piece of red-deer antler containing two rivet holes, $6\frac{3}{4}$ inches by $1\frac{1}{4}$ inches (fig. 7).

N.B.—Nos. 11–15 are probably strengthening pieces riveted to the backs of combs.

16. Long-handled bone comb; teeth missing; ornamented with incised lines round the periphery; 3 inches long (fig. 8).

17. Fragment of bone, possibly part of a long-handled comb; shows signs of tooling; $5\frac{1}{4}$ inches long (fig. 8).

18. Sheep's-shank bone drilled through the centre, the holes being bored from each side, 4 inches long; hole, $\frac{1}{4}$ inch in diameter.

19. Shaped blade, oblong in section, $3\frac{3}{4}$ inches long; one end broken,



Fig. 8. Awl and Splinter of Bone, polished and pointed, and two long-handled Combs wanting the teeth.

the other bevelled on both of wider surfaces to a fine edge; highly polished.

20. A similar tool to 19, with a blunt and rounded end; length $2\frac{3}{4}$ inches.

21. Awl of cleft bone, the end showing wear, $2\frac{1}{4}$ inches long.

22. Bone awl, $3\frac{3}{8}$ inches long.

23. Pointed fragment of bone, the end showing signs of use as an awl, $3\frac{3}{4}$ inches long (fig. 8).

24. Bone toggle, $1\frac{3}{4}$ inches long, grooved for attachment of thong.

25. Vessel made from whale's vertebra, nearly complete (fig. 9).

26. One of a set of bone dice, squared up from a cylindrical bone, 2 inches long by $\frac{3}{4}$ inch side (fig. 10).



Fig. 9. Vessel hollowed out of a Whale's Vertebra.

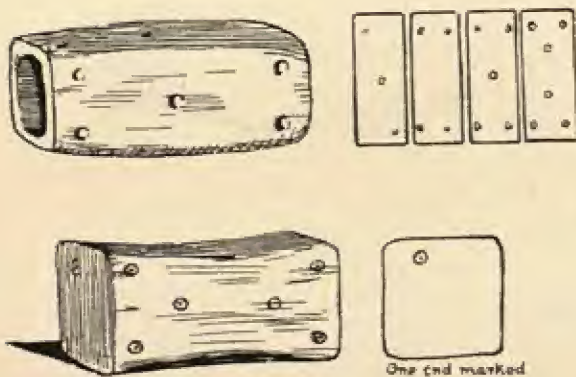


Fig. 10. Two Bone Dice and their numbered faces.

27. Another of a set of bone dice as above, but solid, $1\frac{3}{4}$ inches long by $\frac{5}{8}$ inch square at centre (fig. 10).

28. Half a short cylinder of bone, edges bevelled and rounded; the other half missing; $\frac{5}{8}$ inch diameter.

29. Section of bone, showing saw-marks, evidently the first stage in the manufacture of C 28.

30. Bone pin, 3 inches long.

31. Bone pin, highly polished, $1\frac{7}{8}$ inches long (fig. 11).

32. Bone pin, broken, 3 inches long (fig. 11).



Fig. 11. Bone Pins and Fragments (Nos. C 31-46).

33. Bone pin, polished, 3 inches long (fig. 11).

34. Bone pin, polished, $3\frac{1}{2}$ inches long (fig. 11).

35. Bone pin, lower half, 2 inches long (fig. 11).

36. Bone pin, point half, 1 inch long (fig. 11).

37. Bone pin, $1\frac{1}{2}$ inches long.

38. Bone pin, point half, $1\frac{1}{4}$ inches long (fig. 11).

39. Bone rivet, $1\frac{1}{2}$ inches long (fig. 11).

40. Bone rivet, 1 inch long.

41. Bone rivet (doubtful), 2 inches long (fig. 11).

42. Bone rivet, $1\frac{3}{4}$ inches long (fig. 11).

43. Bone rivet, $1\frac{3}{8}$ inches long (fig. 11).

44. Bone rivet, $1\frac{1}{2}$ inches long (fig. 11).
45. Bone needle, highly polished, $2\frac{1}{2}$ inches long (fig. 11).
46. Bone splinter, slight polish (doubtful), 2 inches long (fig. 11).
47. Bone splinter, slight polish.
48. Bone splinter, pointed (fig. 8).

D. Bronze.

1. Pin, $2\frac{1}{4}$ inches long; head wanting.
2. Pin, incomplete, $1\frac{1}{4}$ inches long, with expanding flat-topped head.
3. Small ring, like the thimble of a label; much corroded and encrusted. This has unfortunately been lost.

E. Pottery.

1-4. Fragments of a large red pot; coarse. Two embossed threads, rope pattern, encircle upper part; six rows of herring-bone marking between, and two rows below the lower rope.

5, 6. Two portions of pottery. Thirteen fragments in all, forming nearly a semicircle. Probable diameter at lip, 8 inches. Waved lip, with one row of diagonal marks on lower crest.

7. Fragment of coarse red pottery, with what appear to be fern markings.

8. Fragment of coarse ornamented pottery.

9, 10. Fragments of a pot, double-lipped, with three rows of herring-bone marking.

11. Fragment of very coarse pot; embossed ornamentation, consisting of a zig-zag thread between the lip and a raised ring below. The thread has been pressed on before the pot was baked.

12. Fragment of fine pottery. Similar ornamentation to Nos. 5 and 6.

13-16. Fragments of pottery, ornamented with zig-zag and fern marking (fig. 12).

17. Fragment of coarse pottery, ornamented with three rows of herring-bone marking between the lip, and an incised line below (fig. 12).

18. Fragment of coarse pottery, ornamented with diagonal incised lines, alternating in direction, and a wavy embossed line (fig. 12).

19. Fragment of pottery, marked with an incised line above a row of punctulations with a pin-point (fig. 12).

20-23. Fragments of coarse red pottery, with rude fern ornamentation (fig. 13).



Fig. 12. Fragments of Ornamented Pottery.



Fig. 13. Fragments of Ornamented Pottery.

- 24, 25. Fragments of pottery, with delicate fern ornamentation (fig. 13).
26. Fragment of coarse pottery, with rude fern ornamentation (fig. 13).
27. Fragment of coarse pottery, with similar ornamentation to Nos. 24 and 25, but coarser.
28. Fragment of finer pottery, bold herring-bone marking (fig. 13).
29. Fragment of lip, horizontal marking.



Fig. 14. Fragments of Pottery belonging to one vessel.

30. Fragment of pot with double lip, similarly ornamented to Nos. 5 and 6.
31. Fragment of pottery, ornamented with three rows of herring-bone marking between lip and a raised ring below.
32, 33. Fragments of coarse pottery, with a wavy embossed line close below the lip.
34, 35. Fragments, similarly ornamented to No. 17.
36. Fragment of coarse pot, with lip incised with diagonal lines.
37-39. Fragments of double-lipped pot, with two rows of herring-bone marking, one on each side of the lower lip.

40, 41. Fragments of lip, ornamented with one row of diagonal lines.

42-44. Fragments showing rude herring-bone marking.

45. Fragment showing rude incisions.

46. Fragment of unornamented lip, with a lump of material fused on to it.

47-54. Specimens of lips of unornamented pottery.

55-60. Fragments of an unornamented pot, fine-grained, thin-walled, and yellow in colour. These pieces all fit together and form a considerable portion of a vessel about 10 inches in height. Lip

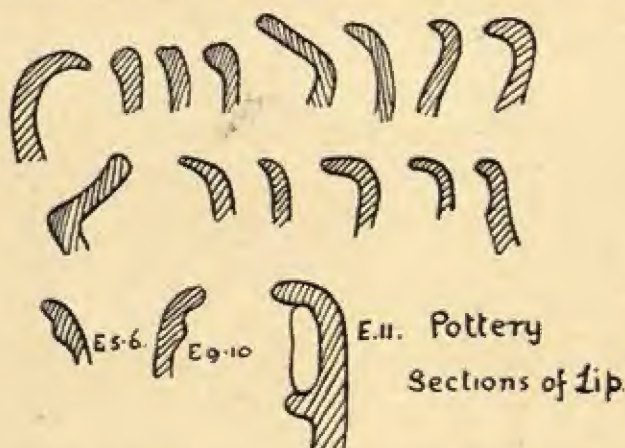


Fig. 15. Sections of the Forms of the Lips of various Pottery Vessels.

diameter 6 inches, maximum diameter 9 inches, base diameter 4 inches (fig. 14).

NOTE.—A very large quantity of pottery of all descriptions was found. The fragments are small, representing vessels of different sizes and thicknesses, fineness and coarseness. The majority are red and show traces of fire, and in certain cases a deposit of soot. A few are yellow, these generally being of a much finer description. The quality of the pottery is, of course, dependent upon the quality of clay from which it was made. The coarsest qualities are very gritty, and are accordingly as fragile as the finer qualities, which have been made of a purer and more extensively worked clay. Fig. 15 shows the different designs of lip.

HUMAN AND ANIMAL REMAINS FROM THE BROCH.

Human Bones.—Remains of at least three individuals, represented as follows :—

1. Most of the shaft of the left femur of a young individual, under eighteen years of age.

2. Part of a skull, consisting of pieces of the right half of the base. The first four cervical vertebræ, these very large and with muscular attachments very well marked. The middle portion of lower jaw, very strong, thick, and markedly bifid. A lower dorsal vertebra and the posterior half of a lumbar vertebra. The upper third of a left humerus. Portions of both clavicles, the greater part of the right scapula. Part of a first rib, a twelfth rib, and fragments of six others. Six inches of femoral shaft. A right internal cuneiform, a third metatarsal, and a single toe bone.

3. A left internal cuneiform, differing markedly in size from the right one (above), so that it probably represents a different individual. (Not knowing the conditions under which these bones were found, it can hardly be proved whether all those mentioned under (2) belong to the same individual or not.)

Shells.—Limpet and periwinkle, numerous.

Escallop, oyster, and cockle, a very few: fragments only of the last two.

Crab.—A few fragments of the large claws of one of the small crabs.

Whale and Seal.—Sundry large bones.

Ox.—Many whole and broken limb bones, ribs, portions of skull, teeth and horn cores. The size and shape of the latter suggest that they belong to the Celtic Shorthorn (*Bos longifrons*).

Pig.—Large quantities of limb and skull bones, whole and fragmentary. The upper and lower jaw bones of pig were particularly numerous, and several "tusks" were found.

Red-deer.—A fair number of limb bones, vertebræ, jaw and skull fragments, and teeth were found, besides many pieces of antler, many of these being tines that had been sawn or hacked off. One of the fragments shows well-marked grooves where it had been gnawed by voles, evidently a cast antler that had been lying some time on the ground before being picked up.

Sheep.—Many remains, chiefly broken skull and limb bones.

Horse.—One or two bones only identified with certainty.

Gannet.—A complete skull with mandibles, a left coracoid, and part of a radius

Cormorant.—A right tibia and a right radius.

Great Northern Diver.—Left femur and tibia.

Gull.—Upper and lower mandibles, the size of a herring gull.

Wild Swan.—A tibia.

Shag.—An ulna.

Shearwater.—Part of an ulna. Species indeterminable.

Great Auk.—Lower two-thirds of a tibia.

The majority of the mammalian bones (other than man) were those of immature individuals.

APPENDIX.

The accompanying diagram (fig. 16) shows a perpendicular section through the passage I.

Layer A.—Six to eight inches of earth mixed with small stones.

Layer B.—Twelve inches of earth mixed with larger stones. These were mostly water-worn, as were those in section A, and are similar to those still found on the adjacent seashore. A few bones were found in A, and a fairly large number in B. These were of ox and sheep entirely, and none showed signs of working.

Layer C.—Two feet thick. A mass of tumbled stone, evidently fallen debris. Water-worn stones entirely absent. Interstices filled with loose earth. The debris is probably that of fallen secondary buildings.

Layer D.—Varying from 1 to 3 inches. Thickest nearest the door end, and eventually disappearing. Consisted of yellow and brown clay, mixed with peat ash, limpet and periwinkle shells. The shells so largely predominated in places as to entirely displace the clay. A few splintered bones in this layer, in which the bronze ring D 3 was found.

Layer E.—A similar layer to C, and about the same thickness.

Layer F.—A similar layer to D, and about the same thickness, in which the shells largely predominated. The bone needle C 45, one or two pins, C 19, C 14, and the remains of the yellow pot E 55-60 were found in this layer.

Layer G.—A similar layer to C and E, of about the same thickness, passing gradually on either side of the passage into the dry-built walls of layer H. Evidently the debris resulting from the fall of the main wall of the broch.

Layer H.—Dry-built masonry walls on either side, the stones of no great size. The left-hand wall bulged considerably inwards, especially

in its upper courses. Height about 18 inches. The right wall fairly perpendicular and higher. The fallen debris of layer G partly filled the space between the walls, the splintered stones having been driven down into the soft clay that filled the lower 10 to 12 inches of this space. This clay bed rested on broken fragments of stone at the floor level. The clay was arranged—save for the distortion caused by the falling of the debris above—in regular strata of different colours: brown,

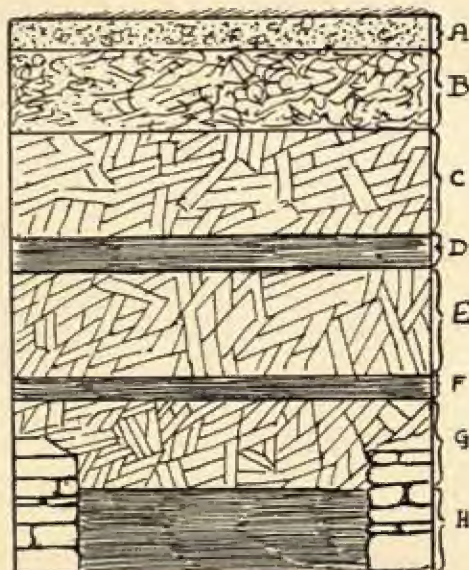


Fig. 16. Section of Strata in the Debris in the Passage I.

yellow, and red. Small cylindrical pieces of charcoal were found in the upper layers, and the whole mass was speckled with minute fragments of charcoal. Bones of ox, sheep, and pig were numerous, many of the larger being splintered, evidently to obtain the marrow. Small fragments of crabs' claws and shells were found. The following objects were found in this layer—C 5, 6, 7, 21, 25, 26, also a large quantity of pottery. A fair number of spherical, ovoid, water-worn, white quartz pebbles also occurred amongst the clay.

IV.

AN ORANSAY SHELL-MOUND—A SCOTTISH PRE-NEOLITHIC SITE.

By A. HENDERSON BISHOP, F.S.A. Scot.

The title of this paper indicates that the culture revealed by the excavations in the Oransay Shell-Mound belongs to a stage intermediate between the Palæolithic and Neolithic periods. The description of the site as post-Palæolithic would have been equally admissible—the point which it is important to emphasise being that the Oransay culture must be recognised as bearing an extremely close affinity to that of the Pyrenees Grotto at Mas d'Azil, excavated by the late M. Piette,¹ a culture which that learned archæologist assigned to the *hiatus* which had been assumed between the Palæolithic and Neolithic periods. That the existence of such a *hiatus* is to be interpreted literally is supposed to receive confirmation from the fact that in the Continental caves the remains of the two periods are separated by layers of stalagmite, which must have taken an immense time to form ; but the supposition lies at hand that the caves were deserted for some reason or other and only re-occupied when a later culture had supervened. That the culture discovered by M. Piette represents a transition stage between the two great stone-age periods is clearly shown by the position of the Mas d'Azil relic bed, which was intercalated between those of the Magdalenian and early Neolithic periods, from each of which it was separated by a sterile stratum of fluviatile deposit and loam containing masses of *Helix nemoralis*.

¹ See E. Piette, *Les subdivisions de l'époque Magdalénienne et de l'époque Néolithique*, Angers, 1889 ; E. Cartailhac, " Les fouilles de M. Piette dans la grotte du Mas d'Azil," *Anthropologie*, 1891, p. 141 ; and E. Piette, " Vestiges de la période de transition dans la grotte du Mas d'Azil," *Bulletin de la Société d'Anthropologie de Paris*, 1895, p. 235.

Previous to these excavations, MM. Boule and Cartailhac had found evidence of a similar culture in a cave at Reilhac associated with the fauna characteristic of the close of the Palæolithic and commencement of the Neolithic age. Further, M. Renault found evidence of the same culture at Montfort, Arriège, in the upper part of layers of the age of the reindeer, *i.e.* late Palæolithic; and at Tourasse, Haute-Garonne, it was found in layers where the remains of reindeer were rare and those of red-deer plentiful.

To this Continental culture as a whole, M. Piette has given the name Azilian, and the chronological position which he thus establishes has been generally accepted by Continental and British authorities.

At first sight it might appear somewhat hazardous to attempt to establish a uniformity of culture in sites whose external conditions are so dissimilar as Mas d'Azil and Oransay—the former yielding its evidence from an inland cave, the latter from a mound on the shore—but for the determination of archæological horizons one of the most important data is the character of the implements associated with the sites, and in this respect these two distant occupations are in harmony. The characteristic implements of both sites are flat harpoons of bone and deer-horn, sometimes with one, sometimes with two rows of barbs, and generally perforated near the base. Other implements common to both sites are shoe-horn-like chisels of deer-horn and bone pins, along with pieces of pumice stone on which they were fashioned. The painted pebbles, however, which are such a remarkable feature in the Continental sites, have not as yet been found in the Scottish sites, and, on the other hand, the convex faceted chisels (limpet gouges) common to all Scottish sites¹ must be regarded as absent on the Continental sites, although somewhat similarly shaped instruments occurred at Mas d'Azil, and possibly at other inland sites.

Evidence of this culture in Scotland was first indicated, although

¹ See note, p. 55.

not recognised, in the excavations of Mr Symington Grieve in Oransáy in 1879-82, when he explored from a natural history standpoint the hill of Caisteal-nan-Gilleán, where he found the bones of the great auk.¹ The late Mr Galloway continued these excavations and examined two other sites, but it was not until his collection was purchased by this Society after his death and reported on by Dr Joseph Anderson that the archæological value of the site was recognised and the affinity of its culture to the Azilian was demonstrated.² That the west coast of Scotland is tolerably rich in the evidence of such culture received further proof a few years later, when this Society explored the M'Arthur Cave in Oban,³ an exploration which was followed by similar discoveries in the Druimvargie rock-shelter in the same neighbourhood. It is to be noted, however, that the relics found in other Oban caves do not belong to this period, in spite of the grouping together of the human remains from all these sites, which were reported on by Sir William Turner—in fact, it is very doubtful if any of the human remains were found in the Azilian layer.

In the course of these Oban excavations the stratification seemed to suggest that the sea had not permanently retired from the 30 feet level at the time of the occupation. Dr Anderson refused to consider the evidence as sufficient to raise such a suggestion to the position of a scientific fact. In this refusal he was amply justified, because the shell refuse intercalated in the gravels occurred not as a definite layer, but in lenticular patches which, as Dr Anderson suggested, might have been deposited in pockets in the shingle; and further, the reports of the excavations fail to give any indication that the shingles themselves contained any implements or food remains.

The problem, therefore, presented itself to me of attempting to find such extensive and intensive evidence as would establish incontro-

¹ "Notice of the Discovery of Remains of the Great Auk or Garefowl (*Alca impennis*, L.) on the Island of Oransay, Argyllshire," *Linnean Soc. Journ.*, vol. xvi.

² *Proc. Soc. Antiq. Scot.*, vol. xxxii. p. 298.

³ *Ibid.*, vol. xxix. pp. 211 and 410.

vertibly the position for which the uncorroborated testimony of the Oban caves offered but nebulous and insecure grounds.

The object of this paper, therefore, is to demonstrate from the shell-mounds of Oransay the existence of human habitation on or about the line of the 25-30 feet beach at a time when the sea had not permanently retired from that level, and, incidentally, to reveal the Azilian nature of the culture indicated in the occupation, and thus to correlate it directly with that of the Oban caves.¹

The island of Oransay lies about 39 miles S.W. of Oban, adjacent to the larger island of Colonsay, from which it is separated by a channel narrow at the eastern end, and expanding to a breadth of about 1 mile in the centre. From this broader portion the tide recedes at low water, and this affords easy communication between the islands. The nearest point in the island of Islay is about

¹ The localities in Great Britain in which traces of Azilian culture have been found are as follows :—

1. *Oransay*.—Five sites, yielding harpoons and limpet gouges (for the identification of the latter, see p. 95). The eleven harpoons from the site on Caisteal-nan-Gilleann are said to have been lost at the Fisheries Exhibition in London in 1883. Of these five sites, two were selected as burial-places during the Viking period.

2. *Oban*.—Two sites—the M'Arthur Cave and the Druinvargie rock-shelter—yielding nine harpoons and numerous limpet gouges, now in the Nat. Mus. Antiq., Edinburgh.

3. *Kirkcudbright*.—A harpoon now in the Kirkcudbright Museum was found in the river Dee.

4. *Colonsay*.—Limpet gouges from three sites, one of which, in close proximity to the neolithic floor discovered by Messrs Peach and Wright (*Geol. Mag.*, vol. x., 1911, p. 164), was discovered by the writer in the autumn of 1911.

5. *Tirce*.—Limpet gouge found by the writer on the sands at Balleavullin in the summer of 1911.

6. *Inchkeith*.—Doubtful. See *Proc. Soc. Antiq. Scot.*, vol. xxxii. p. 304.

7. *Whitburn* (Co. Durham).—A harpoon found on the shore is now in the Black Gate Museum, Newcastle-on-Tyne.

8. *Settle* (W. Riding, Yorks.).—Harpoon, now in the School Museum at Giggleswick.

9. *Dale* (Pembrokeshire).—See note, p. 95.

If the painted pebbles found in the Wester Broch, Keiss, Orkney, are to be accepted as Azilian in nature, it seems to point to the assumption that the broch occupies the site of an old Azilian station. See *Proc. Soc. Antiq. Scot.*, vol. xxxv. p. 119.

6 miles distant, and from there it is but a short crossing to the mainland.

Having on a previous visit to the island been struck by the fact that a seam of shells showed itself in a large rabbit-burrow on the E.S.E. side of a sand-hill, at an altitude of about 40 feet O.D., tailing down towards a point at which, if continuous, it would end in the 25-30 feet raised beach, I made arrangements for excavations on a comprehensive scale, after having obtained the permission of the proprietor of the island, the Rt. Hon. Lord Strathcona. I was fortunate in securing the co-operation of Mr Ludovic M'L. Mann, who witnessed and assisted in the excavations, and associates himself entirely with the conclusions at which I arrived.

The above-mentioned shell-mound, which formed the basis of the excavations, lies on the E.S.E. flank of Cnoc Sligeach, a hill of turf-covered sand standing on a base of rock 650 feet from the present shore-line. The apex of the hill is approximately 54 feet above O.D. The longer axis lies W.N.W.-E.S.E., and is roughly 300 feet, the shorter axis being about 160 feet. There are other sites of occupation on the hill, one of them being situated on the flat circular area on the summit. It was on this highest mound that the late Mr Galloway carried out an excavation limited to a very small area. We are confronted at the very outset with the question how it came about that this exposed hill-top was chosen as the site of a habitation by a people to whom other and favourable sites were available, premising that the configuration of the land has not altered. Would a people whose staple diet is indicated by the food refuse to have been fish and shell-fish have been at the trouble to convey these to this exposed summit, particularly as we have reason to believe that the shell-fish were eaten raw? No tolerable reason can be given for such a supposition, and, on the contrary, it will be demonstrated in the course of the account of the excavations that the sea was at a higher level and washed the hill round the greater part of its circumference, so that

PLAN, AND SURROUNDINGS OF
CHOC SLIGEACH,
ORANSAY,
COLONSAY.

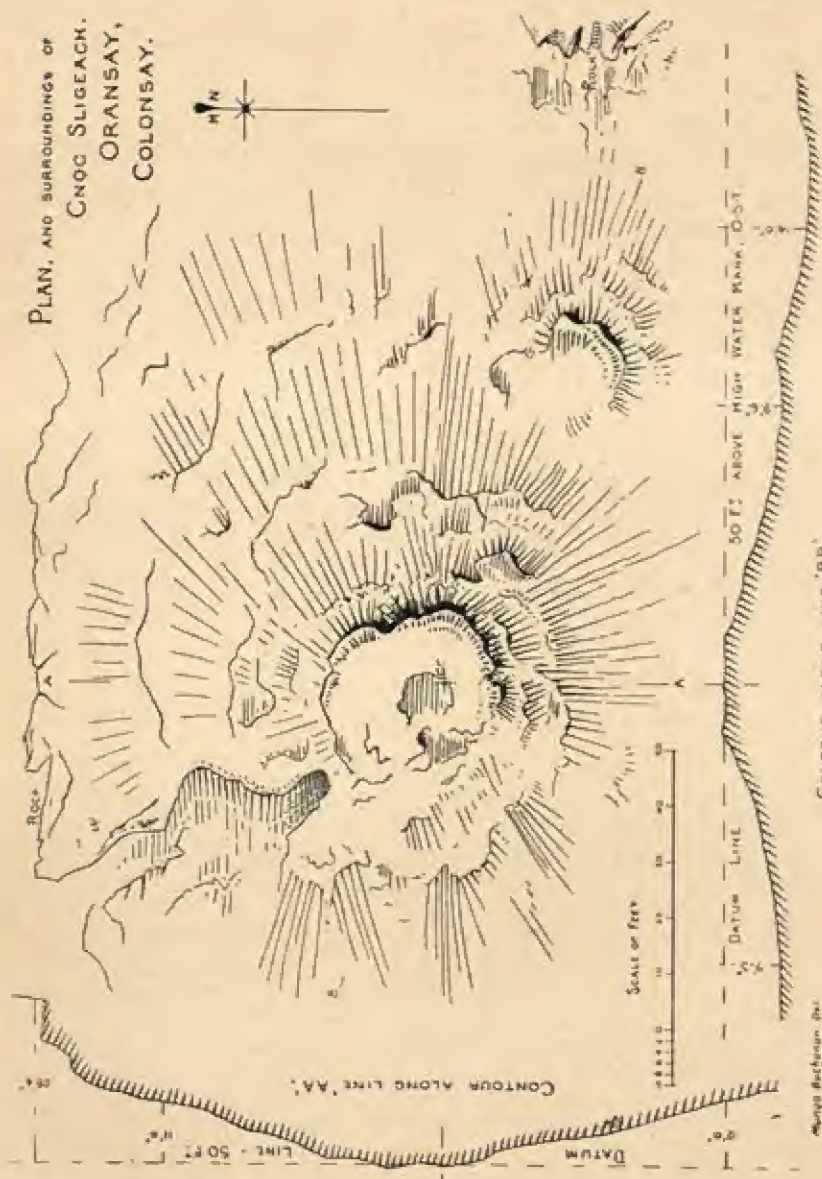


Fig. 1. Choc Sligeach, Plan and Contours.

the present rock was merely a peninsula, the neck of which was formed by the storm ridge of the 25-30 feet beach. This storm ridge would afford dry access to the rest of the island.

In regard to the configuration of the summit, it must be premised that the same conditions which are now operative in the formation of the sand-dunes bordering the present shore-line were at work then, and that consequently those dunes which were on the then existing shore-line would form a wind-screen on the N.W., N., and N.E. sides, from 10 to 20 feet higher than the present summit. The latter would thus constitute the floor of a hollow,¹ which would afford quite an excellent situation for a hut, and the kitchen-midden refuse deposited on it during the occupation formed a coping which prevented wind-denudation of the underlying sand; while the sandy heights surrounding it without this protection were denuded by the action of the wind, thus accounting for the present relative positions of shell-layer and surrounding ground.

The general topography of the hill will be best understood by an examination of figs. 2-7, which, taken together, will give an adequate idea both of the situation of the shell-mounds and of the position of the hill generally with reference to the coast-line and the immediately surrounding ground. In regard to all the plans and illustrations, it is to be noted that the islands of Colonsay and Oransay have not been surveyed since 1873, and the bench marks have become unrecognisable. The datum line of 50 feet is based on the high-water mark on 14th July 1913, and is subject to correction to O.D., say + 4 feet;²

¹ "Colonsay and its Archaeology," L. M'L. Mann, F.S.A. Scot., *Glasgow Herald*, Aug. 30, 1902, p. 7, col. 3.

² The Director-General of the Ordnance Survey writes: "The datum for the Colonsay bench marks is approximately mean sea-level. According to the Admiralty Tide Tables, the mean spring rise is 12 feet and mean neap rise 7½ feet, hence height of high-water ordinary spring tides would be about 5½ feet above the datum for the bench marks. The height of the water on the days mentioned would probably be about 4 feet above datum, but this value may be a foot or more out."



Fig. 2. Raised Beach and Mound to the West of Cnoc Sligeach.



Fig. 3. Showing Position of Cnoc Sligeach and the Coast-line, from E. by S.



Fig. 4. Showing the Higher Ground to the West of Cuoc Sligeach.



Fig. 5. Showing Position of the E.S.E. Occupation.

but the levels given are all in correct ratio. All orientation is magnetic—taken July 1913.

The first illustration (fig. 1) shows Cnoc Sligeach in plan, with contours AA and BB. As already indicated, the upper shell-mound occupies the entire area of the top. To the E.S.E. is the lower mound, the direction of which slopes from the line BB to S. and S.W. To the W. of the upper shell-mound is a lower and flatter mound extending beyond the plan and terminating on sand on the top of the rock exposed on left centre of the picture (fig. 2). The storm ridge of the 25-30 feet beach runs from the higher land in the foreground and merges in the slope of the hill, and the altitude at this point is 34 feet O.D. Pits sunk at various points revealed the beach contouring along the face of the hill at an elevation of about 32 feet O.D., until it abutted on the rock shown in the centre of the picture.

In fig. 3, taken from the E. by S., the relative positions of Cnoc Sligeach and the present shore-line are indicated, while the line of the 15 feet beach is clearly marked immediately below the hill. The sand-dunes bordering the present shore-line are seen rising from the plateau and almost level with the horizon.

Fig. 4 shows the higher ground to the W. of Cnoc Sligeach, as seen from the top of the rock forming the S.E. end of the hill. On the middle left is a mound forming part of the 25-30 feet beach. The contour of this beach is along a line marked by the white sand, the box beyond the tripod and the bags seen in the foreground. During the period of the formation of this beach the sea would cover the low land between the western shell-mound, seen beyond the tripod, and the higher ground beyond, which could be reached on the land side only by the raised beach, which was at that time possibly wider owing to sandy deposits.

In fig. 5, a view from the N. by E., the position of the E.S.E. occupation is marked by the turf on the horizon to the left of the



Fig. 6. View from W.N.W. showing Sand-dunes at East End of Island.



Fig. 7. Configuration of Cnoc Sligeach on the North.

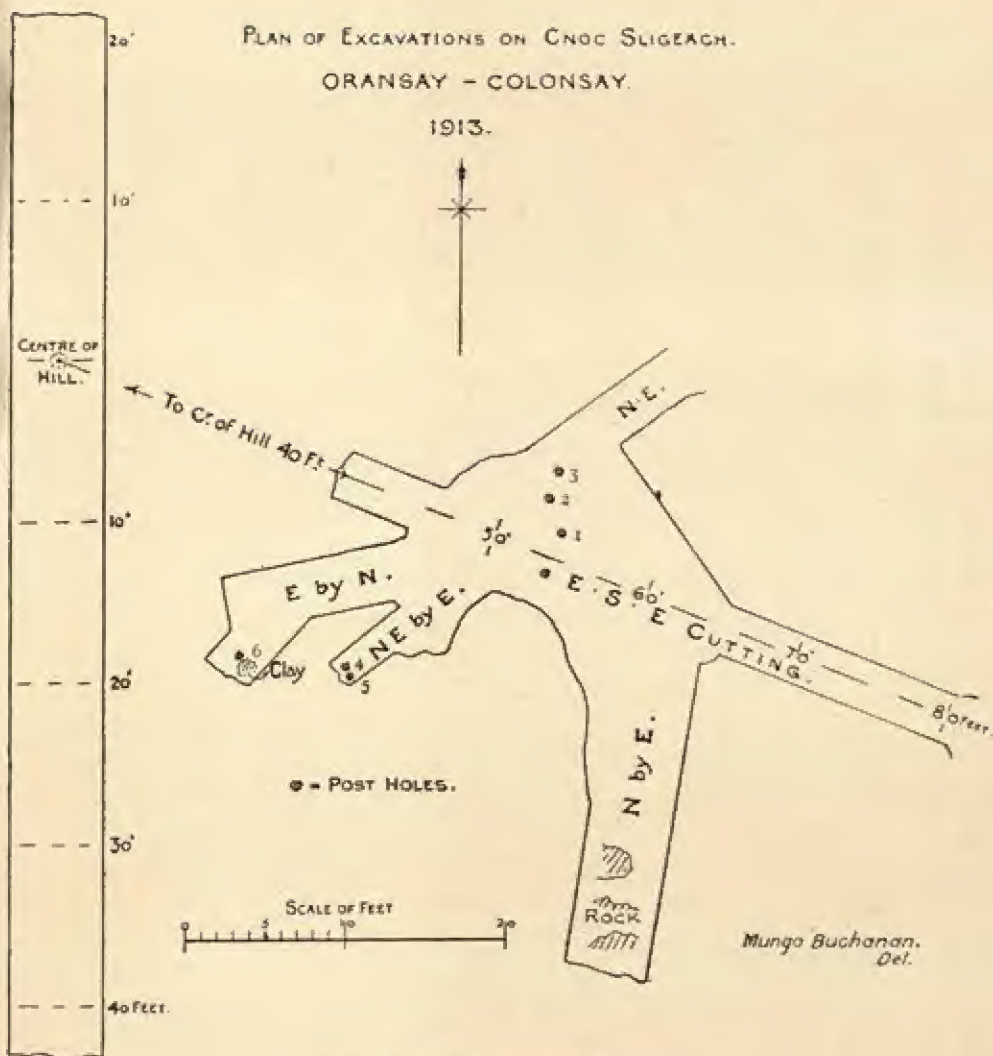


Fig. 8. Plan and Section of Excavation.

picture. The highest point of rock exposed on the N. face—centre of picture—is 16·6 feet below datum line = 37·4 feet O.D. During the lower level of the land mass, the sea, there forming the 25–30 feet beach, would wash the cliff along half its height. The shingle at the foot of this cliff is now covered by 3 feet of sand in 11 different strata. The height over O.D. of the top of this shingle is 22·4 feet, and its thickness at this point is 3 feet.

A better idea of the present shore-line is given in fig. 6, which is a nearer view from the W.N.W., and shows the situation of the sand-dunes at the E. end of the island.

The configuration of the hill on the N. is exposed in fig. 7. Through the deep gully which bounds it on this side the sea at one time gained admission to the low-lying ground W. of the hill. This gully, being the only outlet to a land-locked bay, would be an excellent place to erect a yare or wicker trap for the capture of fish.

The excavations were commenced by making a cut, marked E.S.E. on plan (fig. 8), through sandy material overlying the shell-mound previously referred to as having been noted on a former visit. At a point 42 feet E.S.E. from the centre of the upper hill, the shell-mound lay immediately below the turf (fig. 9). It was 1·5 feet thick and rested on clean unstratified sand. This depth below surface was maintained at 49 feet from centre. The layer increased in depth towards the E.S.E., and the underlying sand sloped in the same direction at an angle of about 45°. At 58·5 feet from centre the top of the shell-mound, viewed in longitudinal section, became almost horizontal, but still dipped slightly at 62 feet from the centre, whereafter it gradually rose. Beyond 72 feet from the centre it ascended much more sharply until it met the bottom of the turf, and then again dipped along a line parallel to the slope of the present hill surface. At 60 feet from the centre a transverse section showed a dip to the S. and a tapering out of the shell-mound in that direction. The thickness of shells under datum string, *i.e.* in centre

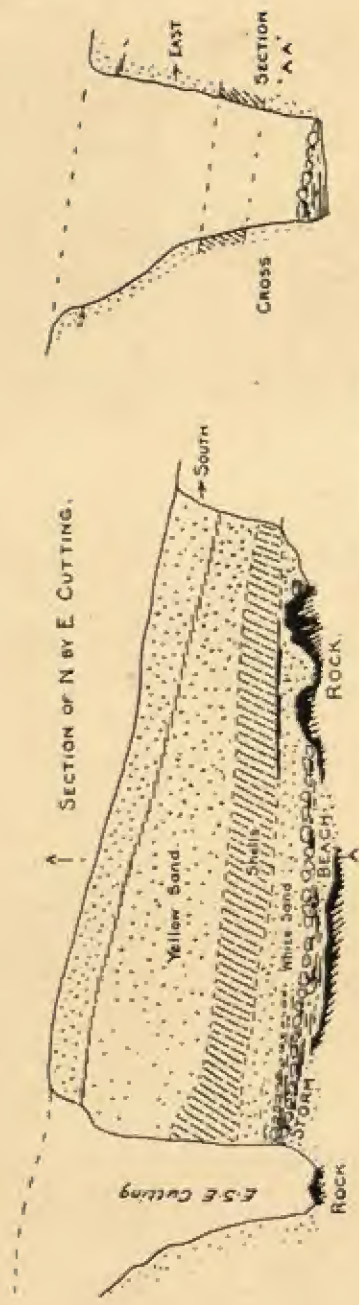


Fig. 10. Section of Trench showing Beach overlying Rock.

of trench, was here nearly 2 feet. The removal of the shell-layer disclosed an underlying bed of pebbles of marine origin, embedded in sand and pounded shells, averaging 2 feet in thickness. These pebbles



Fig. 11. Portion of Beach at North End of Trench viewed from above.

or shingle overlay a 1-foot seam of white sand, which rested on rock, the sand in contact with the rock having a reddish tinge and a clayey consistency. At the point where a transverse section showed a dip to the S.—i.e. 60 feet from centre—another trench was cut extending

S. by W. for over 20 feet (fig. 10), and the shingle or beach, as we must recognise it to be, was still found overlying the rock; and while the shell-layer was present at the N. end of this trench, it was replaced towards the seaward end by strata of shells and grey sand. This portion of the beach is seen in fig. 11 (viewed from above). Throughout the entire depth of this beach were found the same implements and remains as were found in the overlying shell-refuse. To particularise, these consisted of round-nosed chisels of stone and bone, a harpoon fragment of deer-horn, broken and fire-injured shells of the dog-whelk and limpet, fragments of bird and mammalian bones, many of them partially burnt, anvil- and hammer-stones, and a few cowrie shells, mostly broken, but showing evidence of the artificial perforation which will be explained when the implements are described. There is no room for doubt as to the cause of the commingling of these relics with the beach shingles. They can have found their way into it only by the latter being washed by the sea against the talus of shells thrown from the huts placed higher up the slope out of reach of the waves. The greatest height above O.D. of this pounded shell and shingle layer was 33.5 feet, and it could be deposited at such an elevation only by violent S.W. gales acting on exceptionally high tides. That such gales were not of frequent occurrence towards the close of the occupation is shown by the fact, noticeable in fig. 11 (left wall of trench), that strata of shell refuse and grey sand were found resting on the shingles, but free from admixture with them; but, on the other hand, the shell refuse may have become turf-covered during a period subsequent to final abandonment and prior to later incursions of the sea. Such a covering of turf would protect the shells from further disturbance. It is worthy of note that the rock underlying the beach in the S. arm of the E.S.E.-W.N.W. cut is 1.5 feet higher at the S. or sea-end than it is at the N. end (see fig. 10, lower half), and therefore shingle thrown against and commingling with the shell talus remained in this hollow, the reflux of the waves being insufficient to carry it all back over the

higher portion of the rock. The aspect of the top of the beach, when cleared of the overlying shell-layer, is seen in the lower half of fig. 12,



Fig. 12. View of Top of Beach when cleared of overlying Shell-layer.

which indicates the E.S.E.-W.N.W. trench viewed from E.S.E. At the further or W.N.W. end of the trench the shell-layer is seen sloping down on to the beach surface.

A small trial pit shown in the foreground of the photograph

(better seen in fig. 13) revealed the shingles resting on the shell-layer. This is the maximum altitude at which the shingle was



Fig. 13. Shingle resting on Shell-layer.

deposited, *i.e.* 33.5 feet O.D.—the reflux at this height, having been insufficient to dislodge the shell-layer to its full depth. The dense and compact nature of the sand in which the shells are here embedded is an interesting piece of corroborative evidence of the marine nature

of the deposits. (*Cf.* the section of layer immediately overlying this point in fig. 12 (right bottom corner), where the loose nature of the shell-bed is shown.) This overlying deposit, being of later date



Fig. 14. View of Shingly Top of Beach.

and unaffected by marine disturbance, contains no sea-deposited sand.

The loose nature of the shell-layer is shown even better in fig. 14, right-hand top corner. The centre of the picture shows the shingly

top of the beach, and in the foreground a small pit shows a section of the beach, while the top of it is shown in foreground of fig. 15. There we have to notice the dark sand overlying the shell-layer, which indicates an old land surface—proof that the shell-layer was at one



Fig. 15. View of Section of Beach showing old Land Surface.

time turf-covered. A vertical section of the beach is presented in the upper half of fig. 16—centre and left face of trench—while the lower half—in plan—shows the sand resting on the rock. Several large subangular boulders are also shown, which were contained in the beach. These are *in situ*. This view is taken from the S. end of the S. arm of the E.S.E.-W.N.W trench, while that in fig. 17 is taken

from the N. end of the same arm, the rock having been cleared of the overlying beach and sand.

Of the E.S.E. trench itself a typical transverse section is given



Fig. 16. View of Centre of Trench showing Sand resting on Rock.

in fig. 18, at a point 55 feet from the centre of the hill. The general nature of the E.S.E.-W.N.W. trench is seen in fig. 19, which shows the portion of it lying between points distant from the centre of the hill 48 feet and 82 feet respectively, and with this figure it is



Fig. 17. View of Trench showing Rock in Bottom.

TYPICAL SECTION.
*Taken at 55 Feet from Centre of Hill
 along the E-S.E. Cutting.*

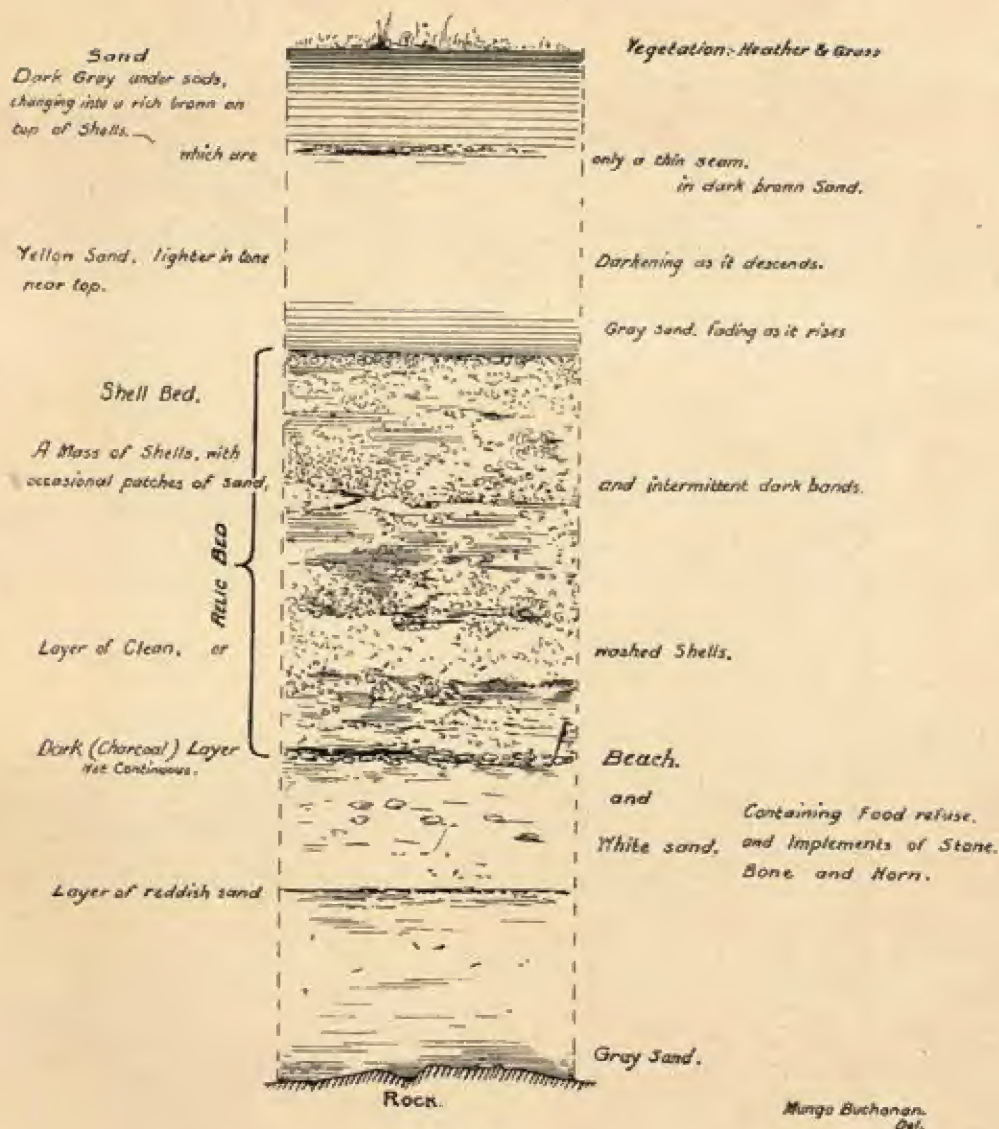


Fig. 18. Typical Section 53 feet from Centre of Hill.

interesting to compare the section in fig. 9. The slope from N. to S. of the shell-mound surface is very noticeable from mid-way



Fig. 19. View of Trench showing Slope of Shell-layer.

along the trench to the further end, as is also the sharp dip to the E.S.E. of the shell-layer in the foreground.¹ The flatter stones

¹ To the N. of this trench the sand underlying the shell-layer dipped sharply to the S., but in the trench itself the angle was less steep.

and flat shells, such as the pecten, oyster, etc., contained in the layer were found to lie on a plane parallel to the surface of the layer, so that we may conclude that they still lie as originally deposited. See also fig. 20, where the angle of rest of the embedded stones is noticeable.



Fig. 20. View showing Embedded Stones.

From this it is an obvious inference that the refuse was deposited from at least two habitations situated respectively about the position from which the view (fig. 19) was taken, and a point to the N. of the left or N. side of the trench. A better conception of the position of the habitations can be got by noting (fig. 21, the same viewed from

the E.S.E.) the converging of the shell refuse, indicating the direction from which it was deposited. A dark seam distinctly noticeable on one side of the trench, about 1 foot below the top, shows the line of an



Fig. 21. View showing converging of Shell Refuse.

old land surface, the dark colour being due to carbon from vegetable matter. This seam contained a few tools, shells, and osseous remains.

No definite chronological position can be assigned to this surface. On the one hand, the remains may have been deposited during the occupation of the higher site—shown in the distance—in which case that site would post-date the lower, or, on the other hand, they may have been scattered over an old surface by the burrowing of rabbits or by wind-denudation of the upper shell-mound. When the E.S.E. trench was excavated between points distant respectively 45 feet and 57 feet from the centre of the hill, it was observed that the strata of refuse differed markedly in composition, clean shells, with a sprinkling of clean sand, being intercalated among dirty shells embedded in dark loamy sand—fig. 9, section, and fig. 22, the latter of which is a cross-section about 53 feet from the centre of the hill. The trench walls show in either margin, and the centre shows sections not quite vertical. Mid-way in this section a patch of the clean shell refuse is seen intercalated between two masses of dark refuse. These heterogeneous layers may be the result of various non-continuous occupations, during which the sandy material contained in the refuse was carried downwards by water-percolation, or they may indicate periods of heavy rains, or again, they may have been washed by sea-spray during periods of violent storms. The marine shingle containing food refuse is also shown in this photograph overlying the sand on which the shell-mound rests, and the stones embedded in the right wall are lying on an inclined plane dipping towards the foreground, *i.e.* from W.N.W. to E.S.E.

During the excavations of the W.N.W.-E.S.E. trench several dark patches of the shape of an inverted cone were observed to extend downwards from the surface of the shells for a distance of 1.5-2 feet. These consisted of dark carbonaceous sandy loam, containing some small fragments of shells, but no entire shells nor any stones. The position of these post-holes, as they were proved to be, is indicated on fig. 8, and one occurs in the section in fig. 9.

A section of the post-hole, No. 2 in plan, fig. 8, is given in fig. 23.

The width is roughly 0.6 foot, and the depth about 2 feet, the surrounding material being the usual shell refuse and dark-coloured sand.



Fig. 22. View of Cross-section 53 feet from Centre of Hill.

This formed the side of a circular hole tapering in towards the bottom. Hard against this wall a bone pin was found. It is noticeable that the hole does not penetrate, to its entire depth, the shell refuse, which is here about 6 feet thick; therefore it must post-date the greater part of

it and point to a later occupation or reconstruction of the dwelling. Such reconstruction may have involved also an enlargement of the structure, the walls being carried forward into the "forced" ground



Fig. 23. View of a Section of Post-hole No. 2 in the Shell Refuse.

formed by earlier deposits of refuse. This also indicates a denudation of the shell-mound, at any rate to the W.N.W. or left of the post-hole, as we may assume that the floor of the dwelling was more or less level.

Post-hole No. 3 on plan (fig. 8) corresponds roughly in size with No. 2, being slightly wider and less conical. This hole (fig. 24) also does not pierce the shell-mass. It forms, with Nos. 2, 4, and 6, an irregular



Fig. 24. View of Section of Post-hole No. 3.

segment of a circle—fig. 9. Nos. 1 and 5 stand outside of this segment. Close to No. 6 (fig. 8) was a thick mass of clay about 2 feet broad, which, from its partially baked appearance, may have been a hearth; if so, the position of No. 6 post-hole is curious.

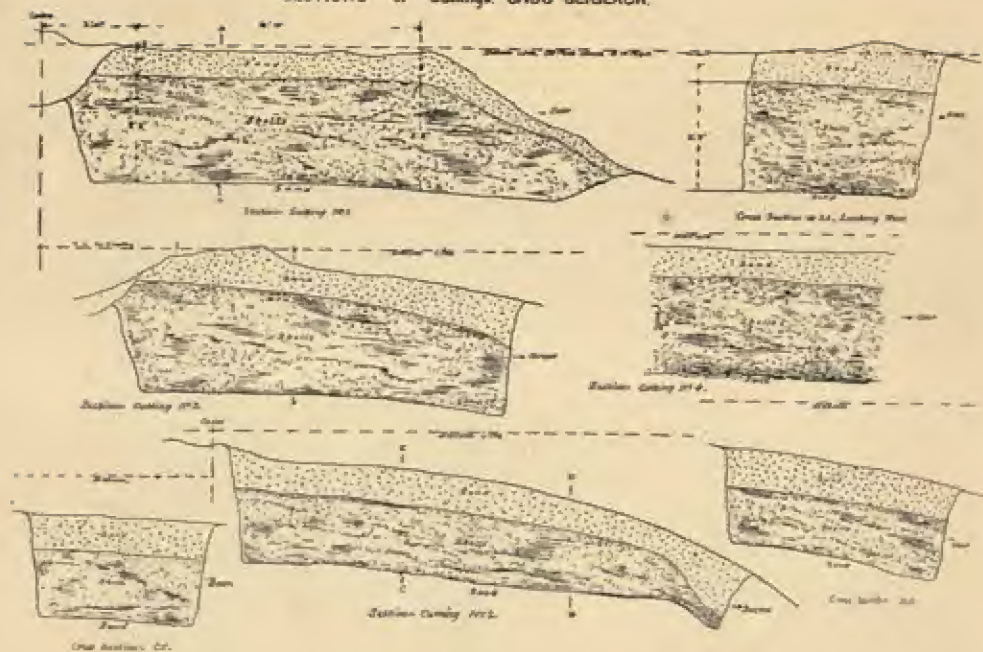
Post-hole No. 4 (fig. 25) differs from the others in that it penetrates the entire depth of shell refuse, which is here less thick, and is overlain by a thicker mass of old land surface. The view shows a section, and is taken from the N.E. by E., and the slope of the



Fig. 25. View of Post-hole No. 4.

underlying sand from W.N.W. to E.S.E. is very marked, commencing on the right of the trench. The surface of the refuse on the W.N.W. side of the post-hole is considerably higher than on the opposite side, as if the end of the post, prior to its final disintegration, had acted as a buttress to the ancient hut-floor. It is not surprising that no

SECTIONS of Cuttings, CNOC SLIGERACH.



PLAN & SECTIONS of CUTTING in FIELD near of "Cnoc Sligerach"

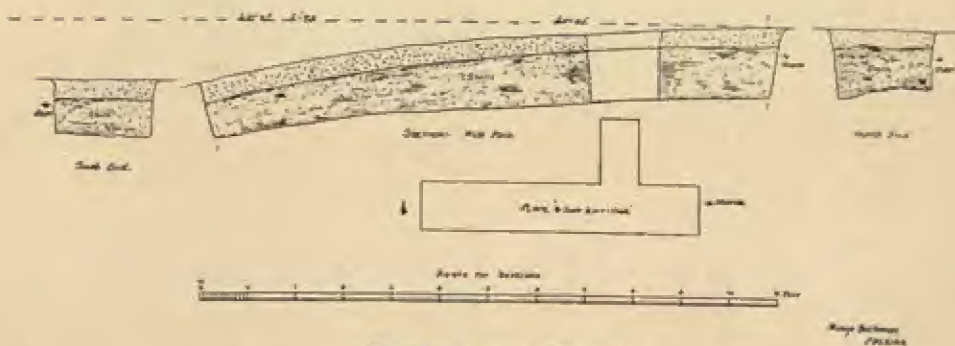


Fig. 26. Sections of Cuttings.

fragments of wood, even as charcoal carbonised by slow oxidisation, were found, but the contained sandy loam, judging from its colour, was rich in carbon. All fragments of charcoal found in the shell-mound during the excavations were protected from percolating water by limpet-shell roofs, and these shells also protected many delicate objects, such as fish-scales and the spines of the spiny dog-fish. Under the S. edge of the flat top of the hill, the shell refuse did not stop abruptly (fig. 26), as it did elsewhere on its circumference (section), but divided horizontally into two strata, the lower following the angle of the underlying sand, which was about 30° , while the upper part lay roughly parallel to the present surface. These two layers are seen in fig. 27, a view of the S. end of the N. and S. cut. The centre shows a cross-section of the lower layer, while in the centre foreground it is shown in plan, and the upper layer, poorer in shells but richer in sandy loam, is shown on the walls of the trench, which is contracted in the lower half of the picture. In the further end of the trench the section is spoiled by the burrowings of rabbits. These animals never burrowed directly into the shell-layer, but ran their burrows over or under it; in the latter case the shells gradually settled down, and some of them were left in the floor of the burrows. The holes were ultimately filled up by blowing sand, and presenting, as they do, in section two or more strata, give the appearance of separate deposits. I would suggest that this may account for the number of layers found by Mr Symington Grieve on Caisteal-nan-Gillean.¹

This division of the layers is probably to be accounted for by a temporary abandonment of the upper occupation, followed by a re-settlement at a time when the configuration of the surface on the side of the hill had been somewhat altered by deposits of blown sand; and the *hiatus* need not have been a long one. Further demonstration of such temporary abandonment was found at the

¹ See Mr Symington Grieve's *The Great Auk or Garefowl—Its History, Archaeology and Remains*, 1885.

N. end of this same cut, where a large number of stones, some of which showed signs of use, and large shells were found in a more or less horizontal stratum, intercalated between two strata of shell refuse, containing the usual proportions of such stones and large



Fig. 27. View of Trench.

shells. This stratum is shown in plan in fig. 28, resting on shell refuse shown in section, and beyond is the overlying shell refuse, also shown in section. A similar layer of stones, etc., occurred on the top of the sand, underlying the shell refuse, and also on its surface, the latter at least pointing to its having been formed under the same

conditions which formed the intercalated layer, while the former may denote the irregular demolition of the sand-dune before occupation and thus afford corroboration of the sand-bunker nature of the site. Temporary abandonments, which may have been



Fig. 28. View of Stones and Shell Refuse.

seasonal, would allow of wind-denudation of the lighter material, and the heavier articles would settle at a common level, being re-covered on reoccupation by further deposits. Such denudation would not take place so long as a structure remained.

Although no very definite traces of post-holes were found in any of the sections of the upper site, we may safely infer from their presence

in the lower site that the depositors of the upper refuse heap were also protected from the weather, and I would suggest that this protection consisted of a kind of artificial cave formed in a sandy hollow, and roofed with timber drifted from the mainland or adjacent islands. These, covered with turf and sand, would provide a shelter resembling



Fig. 29. View of Shell-mound on Top of the Hill.

the caves inhabited by these people on the mainland sites at Oban, to which or to other caves they possibly retired during the inclement months of the year. That the present hill-top was, during the occupation of the site, the bottom of a sandy hollow, is indicated by the abrupt finish (fig. 29) of the shell-mound on all sides except the S. Had the configuration been the same as at present, we would

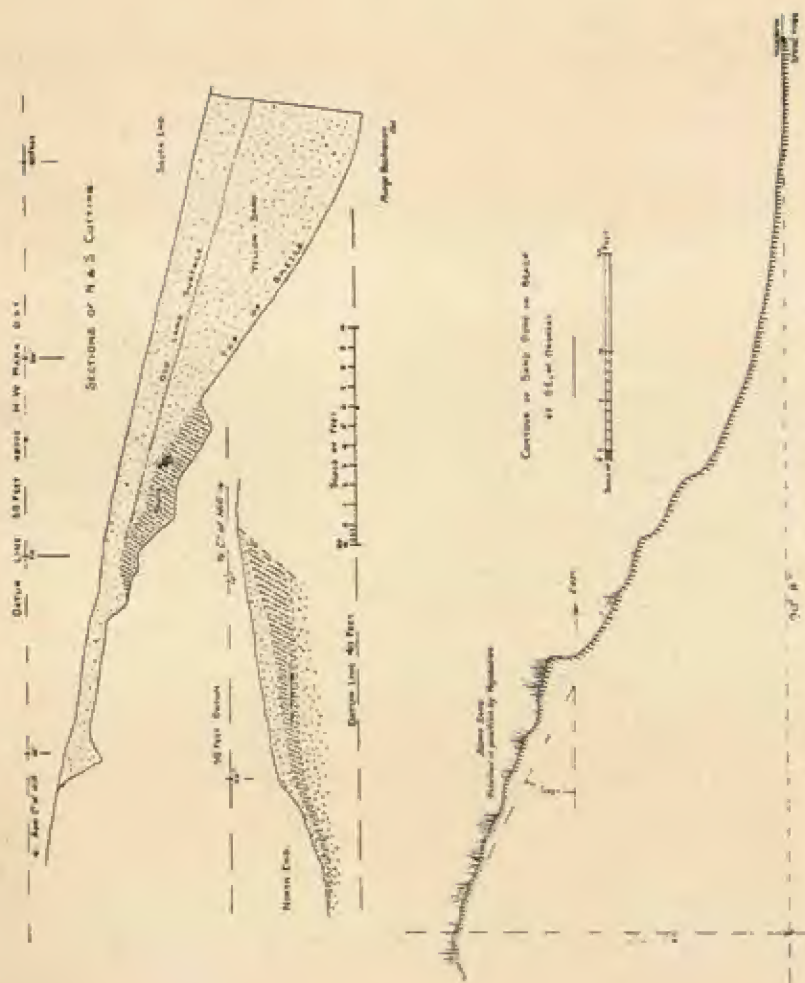


Fig. 30. Sections of Sand-dunes on Beach.

expect to find a talus of shell refuse on all sides; and had the surrounding surface been flat, the shell-layer would have tapered out and died away gradually. Such, however, was not the case, and so the inference seems clear that the ancient shore-line or land margin was covered by sand-dunes similar to those on the present shore-line to the E. of Cnoc Sligeach. Fig. 30 shows a section through these, and the



Fig. 31. View showing the Shore Dunes.

upper half a section through the upper shell-mound. The N. end of this latter shows the position of the stony stratum, while the S. end shows the slope of the shell-refuse surface underlying the drift sand. Time did not permit of the complete excavation of this shell refuse, but trial pits were sunk at various points, and the thickness of the layer was fairly constant. These two sections are shown in the same fig., further to emphasise the similarity between the present and the ancient shore-line. The shore dunes of which fig. 30 is a section are

shown in fig. 31, and a cave-like structure, situated half-way up the slope of these dunes, might be a topographically accurate reproduction of the dwelling-place of this ancient people. It was found by calculation, the data being the width of the base on which the sand could find support and the angle of rest of the present dunes, that the sand to the N. of present hill-top would form a screen 12 feet high, which might be still higher on the other sides, and would efficiently protect the inhabitants on the W., N., and E. sides. (See models in Hunterian Museum, Glasgow.)

IMPLEMENTS, ETC.

It is disappointing to have to record that in these Cnoc Sligeach excavations no flints were found with any secondary working. Moreover, after careful examination of the flint chippings in the National Museum of Antiquities in Edinburgh from the other Oransay sites and from the M'Arthur Cave and the Druimvargie Rock-Shelter, I was unable to detect any secondary working on them. We can be quite certain, however, that the flint nodules brought into the site by the ancient inhabitants were purposely fractured, for at least one anvil stone (fig. 32, top left corner) was found with characteristic pittings, and, moreover, the clean primary flaking of many of the chips shows a facility of working which would seem to point to some definite aim. These chips (fig. 33) would be quite suitable for many purposes, such as the shaping of harpoon-heads, but quite inadequate for such a task as the excavation of a dug-out canoe; and although the absence of tools suitable for such a purpose does not exclude the possibility of the use of such canoes, yet the presumption is in favour of such a hypothesis. Anvil stones (fig. 32, top right and bottom) and elongated pebbles pitted near the end indicate by the nature of the pitting that they were used for breaking the shells of the dog-whelk, and these shells were invariably found broken. The club-like stone on the left of fig. 36 is splintered at the broader end and may have formed a



Figs. 32 and 33. Implements and Flint-chips.

kind of chopper, but the fracture may be merely accidental. Stones of this kind are common on the present beach, and their presence on the site probably indicates a definite use. A chopper-like stone is represented in fig. 34 along with a flat crescent-shaped pebble having a



Fig. 34. Implements.

concave cutting edge, an elongated pebble with two gutters on one face, and a nodule of quartzite with a longer diameter of 4 inches, and a thickness of about 2 inches. This stone bears a striking resemblance to a scraper of Aurignacian type, being flaked in half its circumference, and the flaking executed from the under and flatter side.



Figs. 35 and 36. Implements of Deer-horn and Stone.

The gutter-stone in fig. 35 has a groove which is probably natural, but at the same time shows signs of wear—it was possibly used in the manufacture of bone pins and awls or borers. The implements which were most numerous on the site were elongated pebbles (fig. 36), whose ends were ground to a convex facet on both sides. These, along with similarly shaped splinters of bone and horn (fig. 37), have been found abundantly on all the Oransay and Oban sites, and have been fully described by Dr Joseph Anderson in the *Proceedings* of this Society,¹ but no reasonable explanation of their use has so far been forthcoming. Careful examination of several hundred specimens has convinced me that they were used for gouging the mollusc of the limpet from the shell, and that the ground facets were due solely to such attrition. As an experiment a piece of cement (fig. 36, right bottom corner) was used for this purpose, and the result was a tool identical in form with the stones from the site. It has to be noted that the majority of tools as found were discarded specimens. Their history would be something as follows: A stone of suitable size was chosen from the beach, and the ends chipped by a sharp blow to give the rough surface which was desirable for the easy accomplishment of the end in view. Repeated gougings produced the convex facets, and these gradually became smoother, ultimately losing their gripping power, and so the implements were discarded and thrown into the refuse heap. In some cases, if the stone was still otherwise serviceable, it might be re-chipped. This explanation meets all requirements; it accounts for the abundance of the tools—close on 2000 having been found in Oransay alone—and explains their absence from inland sites, for the somewhat similar implements from Mas d’Azil have flat facets and consequently a straight edge, which could not be produced by any such process, and must therefore have served a different purpose.²

¹ *Proc. Soc. Antiq. Scot.*, vol. xxxii. p. 298.

² Mr T. C. Cantrill, of the Geological Survey, writes: "In 1908 I found several flint chipping-floors in the neighbourhood of Dale, in south-west Pembrokeshire.

The most interesting finds of bone or horn were the harpoon fragments, for the most part of characteristically Azilian type, and similar to those found on other sites (fig. 38). There are two notable



Fig. 37. Implements of Stone.

The sites are marked by accumulations of flint pebbles, cores, and flakes, lying on the surface of some of the arable fields. Among this flint debris occurred a number of elongated pebbles of sandstone, from 4 to 6 inches in length, the ends of which are in some cases fractured, and in other cases worn to a double facet. If these pebbles are limpet-scoops, their presence may indicate an Azilian station in that district. It should be added, however, that on some of the chipping-floors scrapers, arrow-heads, and polished celts have been collected; but it is quite possible that abandoned Azilian stations may have provided raw material for the implements of Neolithic and later peoples."

exceptions—the beautifully fashioned specimen on the extreme right and that in the centre. The former is conspicuous for the extreme clearness with which the barbs stand out from the trunk, and also for the crescent-shape of the barbs themselves. The specimen in the

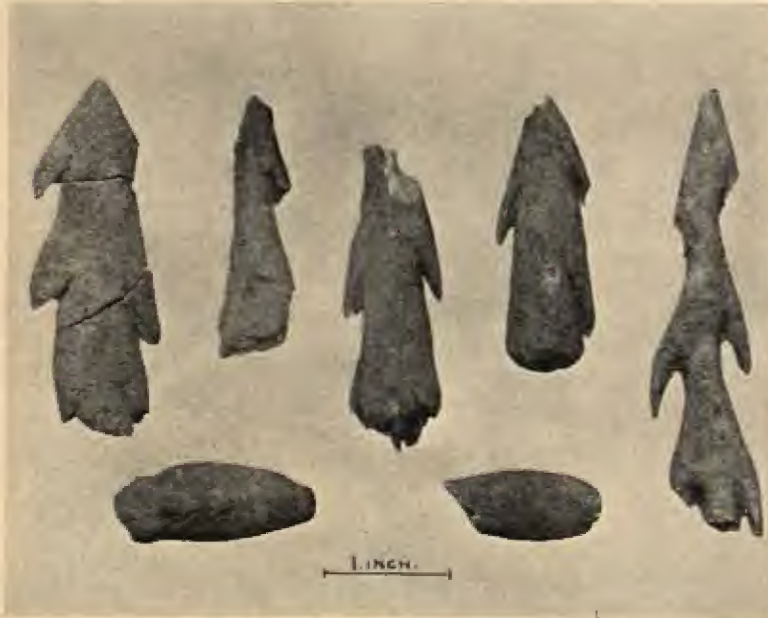


Fig. 38. Harpoons of Bone.

centre is remarkable for an attempt at decoration, consisting of four groups of roughly parallel lines which extend half-way across one face at right angles to the major axis. The trunk fragment (bottom left) has two incisions lying at an angle of about 45° to the major axis. All these harpoons are of bone except that on the extreme left, which is of red-deer antler. The second from the right resembles a specimen

from the M'Arthur Cave, in that its base is ground to a convex facet on one side, suggesting at once its employment for a purpose similar to that indicated for the elongated pebbles and bone and horn splinters described above. Several shoe-horn-like implements (fig. 39), made



Fig. 39. Implements of Red-deer Antler.

from the antler of the red-deer, have proved an enigma, and we may not be wrong in seeking their explanation in that last resort of the puzzled archæologist—that they were used in some sort of skin-dressing process. They are ground to an edge on the inner side of the horn—a flat stone (not illustrated) having a worn area may have been used in

the process. Pins and borers of bone were met with, and also pieces of pumice-stone on which these were fashioned; these latter had two or more grooves sunk deep in the flatter faces (fig. 40). Two deer-horn tines, in fig. 35, are worn at the points, and the larger has also a



Fig. 40. Pins and Borers of Bone and pieces of Pumice-stone.

ground area on the concave face near the trunk. The other two bone fragments (same figure) are also ground, but their purpose is obscure. Five shells of the pecten, illustrated in fig. 41, are worn on the anterior and posterior margins in a manner characteristic of many of these shells found in the refuse heap, pointing to their use as scoops or ladles. The attrition on the remainder of the shell is probably due to natural

agencies, but the local wear is artificial. The perforated cowrie shells, shown in natural size, fig. 42, were numerous. In the majority of the shells the perforations were more or less circular, always situated in the same part of the shells. Other shells, as of the periwinkle, were per-



Fig. 41. Shells of the Pecten worn by use.

forated singly, but these were not so numerous. No other ornaments were yielded by the excavations—perforated limpet shells were abundant, but in the case of these the perforation must be regarded as purely accidental, caused by the apex of these shells being driven by pressure through the thin walls of other shells, and the perforation is invariably from the interior outwards. Of quite a different nature

are the perforations in the shells illustrated in fig. 44, but whether these were intended for a definite purpose or merely to facilitate the extraction of the mollusc is a matter of conjecture. Water-worn shell fragments (fig. 43) were fairly numerous, but it cannot be

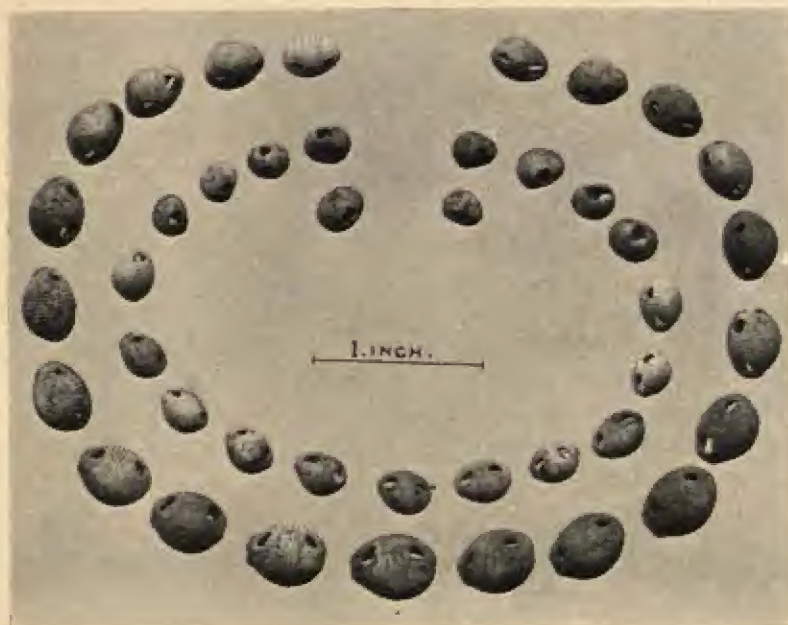


Fig. 42. Cowrie Shells doubly perforated.

determined if they served any end. There are also represented in the illustration spines of the spiny dog-fish (top left), while the six fan-shaped objects are fish-scales.

It was stated at the outset that the object of this paper was "to demonstrate from the shell-mounds of Oransay the existence of human habitation on or about the line of the 25-30 feet beach at a time when



the sea had not permanently retired from that level, and to reveal the Azilian nature of the culture indicated in the occupation." I believe that this object has been attained, and that the photographs and sketches form a guarantee that the work was carried out with scientific accuracy on a scale sufficiently comprehensive to justify the assumption that all evidence, negative and positive, was adequately considered. Moreover, the results yielded by the excavations appear to be so important as to call for the application of a specific designation to the civilisation indicated therein, and while the name Azilian was, from the nature of the culture revealed, serviceable as a tentative description, the site itself may now be allowed to give its name to the period and the name "Oransay" adopted. From a study of the results yielded by the excavations we depict man of the "Oransay" culture as a hunter, a fisher, and a fowler. What his physical characteristics were we are unfortunately unable to determine, for the necessary data, *i.e.* skeletons or definite osseous remains, are wanting. He clothed himself presumably in skins—the bone pins and piercers seem to point to this—while evidence of personal decoration may be seen in the perforated shells and red pigment. What his actual methods of hunting such animals as the deer were, we can only conjecture. His hunting ground would be the larger islands in the neighbourhood and probably the mainland, and to reach these and convey his booty back from them betokens skill in seamanship. His boat must have been a coracle of some sort—skins stretched on a frame of wicker work,—for it is difficult to conceive that he possessed dug-out canoes, inasmuch as the flint chips which have been discovered, though serviceable in other respects, are quite unadapted for working in wood, and no other suitable tools have been found. Perhaps it was in the sea that he found the chief items of his dietary. He possessed well-developed facilities for fishing—the bone harpoons indicate as much—and he would not be likely to neglect the opportunities of placing a yare in the narrow channel already indicated on the north side of the



Figs. 43 and 44. Fish Spines and Scales and Perforated Shells.

hill. It is worthy of note that the remains of crabs found on the site have been identified as belonging only to the deep-water variety, and this presupposes a knowledge of traps or creels. Seals would fall a ready prey to Oransay men; the club-like stones common both in the refuse heap and on the shore would form a deadly weapon in his hands; and though we are driven to conjecture his method of capturing birds, the presence of great quantities of the bones of marine species, including the great auk, leads us to suppose that he employed some such process as is still in vogue in the Outer Hebrides, a sort of snaring by means of a noose on a cord of twisted hair or fibrous grass attached to a long rod. It might be expected that where abundant food supplies would be secured by methods which, while they filled his larder, added the zest of the chase, either by land or sea, the Oransay man would have neither much need nor inclination for seeking sustenance from the soil, even supposing that the rudiments of agriculture were known. Whether he had such knowledge or not, in any case it has to be recorded that there are no traces of mortars, mullers, or of grain, and although the fauna represented is entirely that of the Neolithic period, it is most important to observe that there are two vital omissions—the ox and the dog. The absence of any remains of the latter need not, however, preclude us from assuming that it was used to assist in the chase, for we should not necessarily look for any traces of its bones in the kitchen-midden refuse. We have seen that he ate some of his food raw, *e.g.* some of the shell-fish; but roasting appears to have been the principal method by which it was prepared for consumption, for the fire-fractured stones are not sufficiently numerous to suggest their extensive use as pot-boilers.

I am indebted for assistance during the excavations to Messrs Thomas MacVey, B.A. (Oxon.), Alex. Beckett, James Robson, and to Mr Mungo Buchanan, Corr. Mem. S.A. (Scot.), who prepared the plans from his surveys, which were carried out during the whole time the operations were being conducted.

For the identification of the Fauna I am indebted to :—

C. W. Andrews, D.Sc., F.R.S. (British Museum), who identified the Mammalia.

E. T. Newton, F.R.S., who identified the Aves.

W. T. Calman, D.Sc. (British Museum), who identified the Crustacea.

C. Tate Regan, M.A. (British Museum), who identified the Pisces.

G. C. Robson, B.A. (British Museum), who identified the Mollusca.

- | | | |
|---------------|---------------|---|
| 1. Mammalia, | identified by | C. W. Andrews, D.Sc., F.R.S. (Brit. Mus.) |
| 2. Aves, | " " | E. T. Newton, F.R.S. |
| 3. Crustacea, | " " | W. T. Calman, D.Sc. (Brit. Mus.) |
| 4. Pisces, | " " | C. Tate Regan, M.A. (Brit. Mus.) |
| 5. Mollusca, | " " | G. C. Robson, B.A. (Brit. Mus.) |

A. MAMMALIA.

- | | |
|-------------------------|----------------------------|
| 1. The Grey Seal, | <i>Halichærus gryphus.</i> |
| 2. The Common Seal, | <i>Phoca vitulina.</i> |
| 3. Otter, | <i>Lutra vulgaris.</i> |
| 4. Red-deer, | <i>Cervus elaphus.</i> |
| 5. Wild Boar, | <i>Sus scrofa.</i> |
| 6. A Species of Dolphin | |

B. AVES.

- | | |
|----------------------------|-----------------------------|
| 1. Cormorant, | <i>Phalacrocorax carbo.</i> |
| 2. Shag, | " <i>graculus.</i> |
| 3. Goose, | <i>Anser sp.</i> |
| 4. Sheld Duck ? | <i>Tadorna cornuta ?</i> |
| 5. Water-rail, | <i>Rallus aquaticus.</i> |
| 6. Ringed Plover ? | <i>Ægialitis hiaticula.</i> |
| 7. Tern, | <i>Sterna fluviatilis.</i> |
| 8. Gull, | <i>Larus sp.</i> |
| 9. Razorbill, | <i>Alca torda.</i> |
| 10. Great Auk, | <i>Alca impennis.</i> |
| 11. Guillemot, | <i>Uria troile.</i> |
| 12. Gannet, | <i>Sula bassana.</i> |
| 13. Redbreasted Merganser, | <i>Mergus serrator.</i> |

C. FISH.

- | | |
|---------------------|-------------------------------|
| 1. Conger Eel, | <i>Conger conger.</i> |
| 2. Black Sea-bream, | <i>Cantharus lineatus.</i> |
| 3. Wrasse, | <i>Labrus maculatus.</i> |
| 4. Sea-bream, | <i>Pagellus centrodontus.</i> |
| 5. Angel-fish, | <i>Squatina squatina.</i> |
| 6. Tope, | <i>Galeus canis.</i> |
| 7. Thornback Ray, | <i>Raja clavata.</i> |
| 8. Spiny Dog-fish, | <i>Squalus acanthias.</i> |

D. CRUSTACEA.

- | | |
|------------------|------------------------|
| 1. Edible Crab, | <i>Cancer pagurus.</i> |
| 2. Fiddler Crab, | <i>Portunus puber.</i> |

E. MOLLUSCA.

Gastropoda—

- Patella vulgata.*
Trochus umbilicatus.
 „ *cinerarius.*
Buccinum undatum.
Purpura lapillus.
Trivia arctica.
Littorina littorea (young).
 „ *littoralis.*
 „ *rudis* (young).
Helicella barbara.
Vitrea sp.? *sc.* young, an ordinary British sp.
Clausilia bidentata.

Lamellibranchia—

- Mytilus edulis.*
Modiola barbata.
Ostræa edulis (deep sea).
Cardium echinatum.
 „ *norvegicum.*
 „ *tuberculatum.*
Pecten maximus, adult and young.
Venus casina.
Pecten sp. (broken).
Tapes decussatus.
Arctica islandica.
Ensis ensis.

*Helix nemoralis.*var. *alba.**Hyalinia nitidula.*" *sp.**Vallonia pulchella**Cochlicopa lubrica**Vitrea crystallina*

} from the Cave earth.

Mr Robson adds :—

" I can find no definite indications of any difference between the *Littorina littorea*, *L. obtusata*, and *Purpura lapillus* you committed to me and the modern forms of those species. I looked for two things: (1) Any varietal difference that might be absent in modern forms and present in yours, so as to enable us to assume that during the Azilian period these species were not exactly characterised as they are to-day. But I found no such difference. I could find no character in your forms that I could not match from any set from the coasts of Devonshire or the fjords of Norway. The only noteworthy feature is the absence of any of the larger varieties, both of *Purpura* and *Littorina littorea*; but that is a thing you can find occurring to-day. (2) Any structural characters that associated the Azilian forms with modern cold-water forms, so that we might assume that the Azilian marine mollusca were adapted to a colder climate than the modern. Here again I could distinguish nothing in common between your forms and the Boreal forms of *L. littorea*, etc., which does not also occur among South English forms to-day. Of course I must hasten to say that our series here, though admirable in many respects, are not perfectly adapted for such work, viz. they do not always furnish enough individuals from a particular locality to enable you to conjecture safely what characters, if any, go with that locality. Samples few in number and taken at random are unsafe for biometrical analysis of the kind you propose, and I am afraid that our series are not altogether satisfactory for such work for this reason. But all the same I would be indeed surprised if subsequent research were to contradict these findings.

Of course, in dealing with these negative results you must bear in mind that though Mollusca are pretty sensitive to change, the absence of definitely cold-water forms does not necessarily prove that the climate was like the modern one."

Mr E. T. Newton also examined samples of material from the post-holes and other definite locations. His report is appended :—

A. POST-HOLE NO. 3, AT 52 FEET PEG.

A quantity of fish-bones, mostly indeterminate, and four otoliths referable to small haddock (*Gadus aeglefinus*).

Also numerous shells, chiefly *Patella vulgaris* (Limpet), with *Purpura lapillus*, *Solen*?, *Saxicava*?

Also land-shells *Vallonia pulchella* (= *Helix*) and *Vitrea*.

B. LAYER OF CLEAN SHELLS.

A quantity of finely broken shell fragments and pieces of crustaceans, *Patella* and *Purpura*.

Also *Pyramidula rotundata* (= *Helix*).

Cochlicopa lubrica.

Carychium minimum.

Jamnia muscorum (= *Pupa*).

C. FROM BOTTOM OF SHELL-LAYER AND TOP OF BEACH.

Alca torda (Razorbill).

Fish fragments (indeterminate).

Pyramidula rotundata (= *Helix*).

Vallonia pulchella (= *Helix*).

Vitrea.

Pupa.

Carychium minimum.

Patella.

Purpura.

D. BLACK SOIL, ETC., FROM LAYER 2 INCHES TO 3 INCHES DEEP, AT PEG 64.

Numerous shells of *Patella vulgaris*, *Purpura lapillus*, *Littorina*, *Murex erinaceus*, *Solen*, and *Cancer* (Crab).

Also *Pyramidula rotundata* (= *Helix*).

Vitrea.

Also fish vertebrae, etc.

Alca torda (Razorbill).

E. WITHIN THE STONES AT BOTTOM OF PIT, 6-25 FEET BELOW SURFACE.

Fragments of shells :—

Patella vulgaris.

Helicella caperata (= *Helix*).

Purpura lapillus.

Vallonia pulchella (= *Helix*).

Littorina.

Vitrea.

Cyprina?

Pupa.

Mya.

Carychium minimum.

Cancer (Crab).

Fish bones (indeterminate).

Perch ? scales.

Fragments of bone—may be human, and perhaps burnt.

I am indebted to Mr A. H. Lyell, M.A., F.S.A., who examined samples of soil from the post-holes for seeds, but reports that he is unable to find any; also to Mr E. Russell Burdon, M.A. (Cantab.), University Lecturer in Forestry, whose report on the fragments of charcoal will be found at the end of this volume.

MONDAY, 12th January 1914.

GEORGE NEILSON, LL.D., Vice-President, in the Chair.

A Ballot having been taken, the following were duly elected Fellows :—

GORDON COCHRANE HOME, 43 Gloucester Street, Warwick Square,
London, S.W.

Sir ARCHIBALD LAWRIE, The Moss, Dumgoyne, Stirlingshire.

JAMES JAMIESON MALLOCH, M.A., Headmaster, Higher Grade School,
Juniper Green.

Rev. J. T. MIDDLEMISS, The Manse, Roker, Sunderland.

JAMES HALL SCOTT, Motor Engineer, Palma Place, Melrose.

GEORGE DUNCAN WHITE of Kilrenny, 25 Marketgate, Crail.

The following Donations to the Museum and Library were exhibited,
and thanks voted to the Donors :—

(1) By A. WEBSTER PEACOCK, F.S.A. Scot.

Highland Broadsword and Scabbard, stamped "Andrea Ferrara."

(2) By Major WILKIE-DALYELL, F.S.A. Scot., through J. HEWAT
CRAW, F.S.A. Scot.

Two Urns of Food-Vessel type ; three Flint Knives ; a Scraper, and
perforated Axe Hammer, found in a cairn at the Hagg Wood, Foulden,
Berwickshire. [See the subsequent communication by Mr Hewat
Craw.]

(3) By JOHN FRASER, Corr. Mem. S.A. Scot.

A Pointed Flint Implement, roughly chipped, and of a peculiar form,
resembling a Palæolithic type, and three Flint Scrapers, from Harray,
Orkney. The pointed implement (fig. 1) was picked up by a crofter,

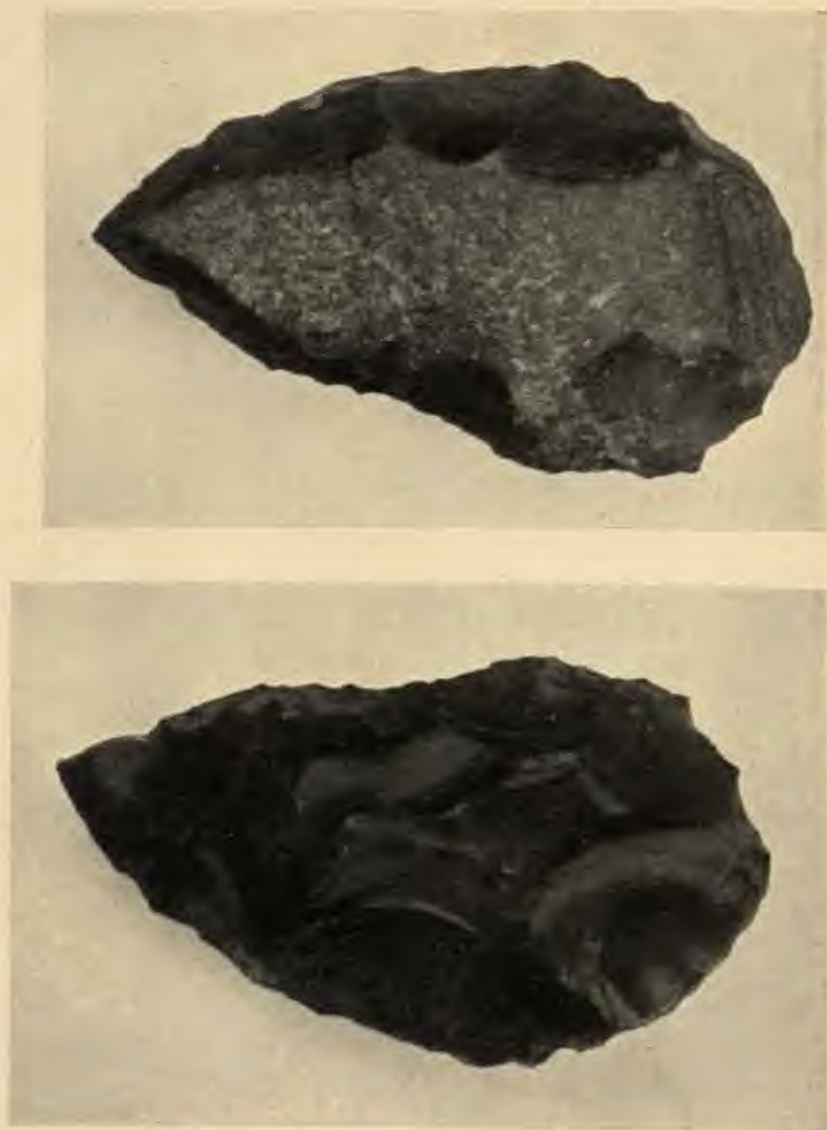


Fig. 1. Pointed Implement of Flint, found on the surface in Harray, Orkney (1)

on the surface of the ground, in gravel, on the Common to the west of the township of Upperbrough, Harray, at about half a mile distant from the Loch of Harray, and some five miles inland from the sea.

(4) By ERIC STAIR KERR, M.A., F.S.A. Scot., the Author.

Stirling Castle, Its Place in Scottish History. 8vo. 1913.

(5) By ROBERT HYSLOP, F.S.A. Scot., the Editor.

Echoes from the Border Hills, being the Reminiscences of the late John Hyslop, Esq., F.S.A. Scot. 8vo. 1912.

(6) Bequeathed by Miss C. L. H. DEMPSTER.

Tales from the People of Sutherland. MS. 8vo. 1859.

The following Communications were read :—

I.

NOTICE OF THE EXCAVATION OF A CAIRN AT INVERLAEL, INVERBROOM, ROSS-SHIRE. By JAMES E. CREE, F.S.A. Scot.

About the beginning of June last year I happened to be in Sutherland with my son on a fishing expedition. There I received a letter from Mr A. O. Curle, the Director of the Museum, informing me of a communication he had had from Lady Fowler of Inverbroom, Ross-shire. This letter was to the effect that some roadmen, when removing stones from a cairn for road-metal—a custom much to be regretted—had discovered a cist, and Lady Fowler was most anxious that a proper investigation should be made, and careful notes taken of any phenomena likely to be of archaeological interest. Mr Curle suggested that I, being in the neighbourhood, should undertake the work, and to this I readily agreed.

After corresponding with Lady Fowler, I found myself in a few days surveying the cairn, which I ascertained was on the property of Inverlael, belonging to Mr Gilmour, although it lay but a short distance from Inverbroom House.

Lady Fowler had in advance secured Mr Gilmour's permission to have the cairn opened up, and accordingly the work of investigation was at once proceeded with; Lady Fowler kindly furnishing the necessary labour and tools, while Miss Fowler and members of the house-party lent valuable assistance.

The cairn (fig. 1), which is indeed a remarkable one, is situated on gently sloping ground about 150 yards to the south of Inverbroom Post Office, and within a few yards of the main road from Ullapool to Garve. It is 42 feet in diameter, and has probably been a little over 4 feet in height. Unfortunately the cist containing the principal interment, which was approximately in the centre of the cairn, was, I believe, opened some twenty years ago by two young men who

expected to find treasure. Two or three other cairns in the vicinity, of similar dimensions, had also been opened by these young men about the same time, and, needless to say, the result of their work has been unrecorded. It is highly probable, however, that their hunt for gold would not be rewarded. The cairn had further been partly destroyed by the removal for road-metal of the smaller stones from about one-third of its diameter, indicated on fig. 2 by the dotted



Fig. 1. View of the Cairn at Inverlael.

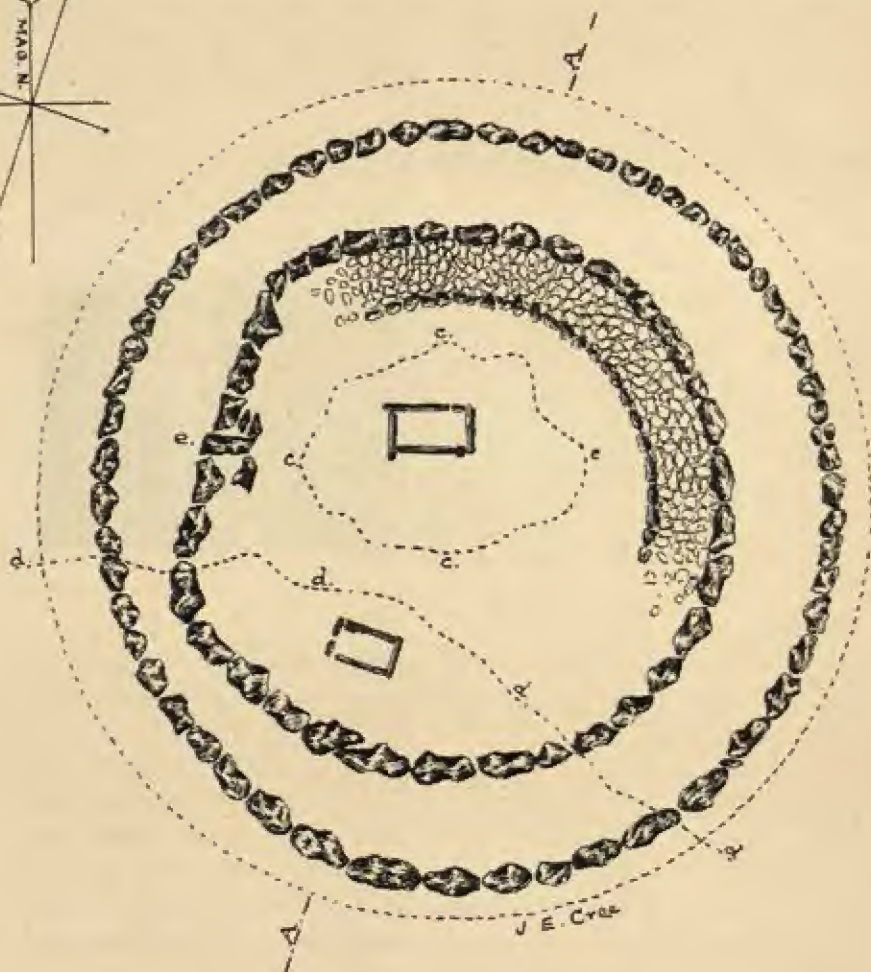
line and the letters *d. d. d.* It was when engaged in this operation that the roadmen discovered the second cist (fig. 3 (photograph¹) and 4 (plan)).

When Lady Fowler heard of the discovery of this cist, she at once requested that nothing should be disturbed pending a proper examination; but again the thought of buried treasure proved too strong for the roadmen, and they had raked through the contents of the cist with their fingers in the hope of finding gold. I mention this merely to make it clear that it was thus impossible for me to determine the

¹ Photograph showing small cist containing incinerated human remains, kindly taken by Miss Arthur, Inverlael Lodge.



Section through Cairn at A.A.
b. b. Elevation of Cairn before excavations



Ground Plan of Cairn.

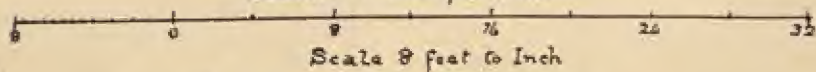


Fig. 2. Ground Plan of Cairn at Inverisael.

original position of any of the vestiges of human bones, or of the objects found in the cist. The interment here had been after in-



Fig. 3. Small Cist.



Fig. 4. Ground Plan of Smaller Cist in the Cairn at Inverlael.
Scale 2 feet = 1 inch.

cineration, and the cist is of small dimensions. Its long axis lies west-north-west by east-south-east, and its measurements inside are as follows: length 37 inches, breadth at west-north-west end $11\frac{1}{2}$

inches, breadth at east-south-east end 14 inches, depth 13 inches. The bottom of the cist is formed of a single slab of stone, while one slab forms each side, that on the south-west side being $2\frac{1}{2}$ inches in thickness, and that on the north-east side being 2 inches in thickness. The east-south-east end is formed of one stone $1\frac{1}{2}$ inches in thickness, and the west-north-west end is of two stones, each about $1\frac{1}{4}$ inches in thickness. The side stones are both inside the end stones. A single large slab had been used as a covering stone. It measures 4 feet in length by about 2 feet 9 inches in breadth, but this the roadmen had broken in two for easier handling. Only a small quantity of burnt human bones was recovered from this cist, and these, unfortunately, were found by Professor Bryce, to whom they were submitted, to be too comminuted to warrant him in expressing any opinion as to sex or age.

After carefully passing the deposit through a small-meshed riddle, a flint arrowhead (fig. 5, No. 1), unfortunately slightly broken, and two flint scrapers (fig. 5, Nos. 2 and 3), with two fragments of another, together with a mussel shell and several small white quartz pebbles, were brought to light. The arrowhead measures $1\frac{1}{4}$ inches in length by $\frac{1}{16}$ inch in breadth across the barbs, which curve slightly inwards towards the tang. It is neatly chipped over both faces, which are equally convex, and the edges are finely serrated. The larger of the two scrapers is oval in outline, and has been made from an interior flake. It shows secondary working, and measures $1\frac{5}{8}$ inches in length, $\frac{1}{8}$ of an inch in greatest breadth, and $\frac{1}{32}$ of an inch in thickness. The smaller scraper has been made from an exterior flake. It is discoidal in shape, and measures $\frac{9}{16}$ of an inch in diameter, and $\frac{9}{32}$ of an inch in thickness. The arrowhead and scrapers have all been through the fire.¹

¹ The finding of calcined implements along with incinerated human remains is very rare in Scotland. Only two or three instances are known.

Mr J. Graham Callander, in vol. xlii. of the *Proc. Soc. of Ant. of Scot.*, at p. 218,

About 4 feet to the north-east of the north-east corner of this cist, a small quantity of charcoal, mixed with some sandy soil, was noticed in what might be described as a small pocket amongst the stones.

The work of examining the structure of the cairn was next undertaken. The portion partially laid bare of small stones by the roadmen revealed two concentric settings of large rounded stones crossing the cleared area. These large stones were followed with a view to ascertaining their extent. Proceeding with great care, it was found that both settings of large stones completely encircled the cists. These are set on the natural surface of the ground, and had been entirely covered by the agglomerated mass of small stones forming the cairn. The

describes the finding of five calcined arrowheads and some objects of bone, along with burnt human remains, in a cinerary urn found in a cairn in the parish of New Kilpatrick, Dumbartonshire.

Canon Greenwell (*British Barrows*, p. 15) says: "It is not an uncommon occurrence to find pins, generally made of bone, but sometimes of wood, with a deposit of burnt bones. In most cases they are calcined, and no doubt represent the fastening of the dress or covering in which the body was enclosed before the burning took place." Again, at p. 51, he remarks that "ornaments and objects of personal decoration are sometimes found associated with burials in the barrows. . . . They accompany burials after cremation, as well as those by inhumation. When met with in association with a burnt body, in many cases they have not been burnt with it, but have been placed amongst the calcined bones, after they were collected from the funeral pile; and the same may be said of certain implements of flint."

Mr J. R. Mortimer (*Forty Years' Researches in British and Saxon Burial Mounds of East Yorkshire*, p. 1 of Introduction) says, in reference to this subject: "It is difficult to explain the origin of the practice of burning and breaking tools and weapons, evidences of which are found with interments. The burnt instruments found accompanying cremated bones would seem to be the least difficult to explain. They probably were placed on the pyre along with the body as part of its equipment for the next world.

"The discovery of tools, which must have been purposely broken at the time they were placed in the grave, is most difficult to account for. Possibly this custom originated with some wily individual, who, . . . wishing to minimise the temptation there might be to deprive the dead body of its accompanying articles, made them useless, in this world, by breaking. On the call of its owner to spirit-land they would come forth, like himself, restored to their shape."

inner circle proved to be slightly flattened or "D"-shaped towards the west, and it was observed that the stones forming both the outer



Fig. 5. Objects found in the Cists. (See pp. 116 and 122.)

and the inner circles were of larger dimensions on the southern than on the northern half of the cairn. The work of exposing the inner circle had not proceeded far when I noticed that the superimposed stones were not merely tumbled in, but were regularly laid with some

care, and a retaining wall extending for about 30 feet round the north-east portion of the cairn was brought to light (fig. 6).¹ By cross-cutting it was found that this wall was about 4 feet in thickness. Stones of moderate size, neatly laid, formed the inner face, and between the inner and the outer faces the stones seemed to have been laid irregularly. Owing to the ruinous condition of the cairn it is unfortunately



Fig. 6. Part of the Retaining Wall.

impossible to say how far this wall originally extended, but I am inclined to think that it may not have formed a complete circle.

It is quite possible that the small cist containing the incinerated remains may have been a secondary interment, and the wall in this direction may have been pulled down to make room for it.²

¹ This most excellent photograph, together with fig. 1, was taken by the Hon. Elsie Cameron Corbet, Inverlael Lodge, and sent to me by Lady Fowler.

² In the *Proc. Soc. Antiq. Scot.*, vol. vii. p. 268 (1866-68), the Rev. Dr Joass describes a cairn which he excavated at Eddertoun in Ross-shire, which in some respects bears a striking resemblance to the cairn at Inverlael. He mentions that one of the "kists" was almost surrounded by a double circle of boulders on the natural surface." In this case, however, only one setting of stones (the inner)

A large stone (marked *c* on fig. 2) occurs on the western side of the inner circle, approximately in the centre of the flattened portion or chord. It is situated nearly due west of the central cist, and measures 2 feet 6 inches in length by about 12 inches in breadth. Its long axis lies east and west, and it is set at a right angle to the course of the circle. Inside the inner circle, and immediately adjoining this boulder on the north side, are two stones, each about 15 inches in length, and this may have formed the terminal point of the wall in this direction; but unfortunately between the point indicated and the point where the wall at this end was definitely recognised—a distance of about 8 feet—the workmen had already cleared away the stones, and it is therefore impossible to say whether the wall extended further towards the south than the point noted on fig. 2.

On the south side of the boulder marked *c* lies a large stone measuring 18 inches in length by 12 inches in breadth. This, with one of the stones of the inner circle and the boulder referred to, forms a small triangular space which was filled in with smaller stones. Its excavation, however, revealed nothing of interest.

Having completed this part of the excavations, I next turned my

encloses what may be considered as the central cist, and this is also "D"-shaped. The outer setting of stones surrounds this one cist on three sides, but on the fourth side, instead of continuing the circle, the large stones have been placed in a straight line for a few feet, thus giving it more the appearance of a crook or sickle. Unfortunately, Dr Joass fails to mention the orientation of the cists within the stone settings, and therefore one cannot compare the "D"-shaped inner circle in the Eddertoun example with that found at Inverlael. In the Eddertoun cairn, there were no less than six cists, and the burials had been both by inhumation and after incineration.

Dr Joseph Anderson (*Scotland in Pagan Times*, p. 90) says that "in point of fact the two modes of burial are occasionally present in the same cairn," and mentions the Eddertoun cairn as an example. The two modes of burial found in the Inverlael cairn may therefore be contemporaneous. But if that be the case, then it is probable that the wall did not originally form a complete circle, as, had it been continued of a uniform thickness, it must have been built over one corner of the smaller cist, and this seems unlikely.

attention to a re-opening of the central cist, which, as I have already mentioned, was disturbed many years ago. The extent of the previous excavation is indicated on fig. 2 by the dotted line marked *c. c. c.* After clearing away stones and rubbish, which in the intervening period had accumulated in and about the central cist, the large side stones were exposed. No covering stone remained, but otherwise the cist (fig. 7) had suffered little or no damage. Its long axis lies east and west, and the slabs of which it is composed are massive. The stone forming the east end of the cist measures 2 feet 3 inches in length, and 10 inches in thickness, and it extends beyond both sides.



Fig. 7. The Central Cist. Scale 2 feet to 1 inch.

The north side is composed of rubble for the space of 9½ inches in length. Adjoining this is a large stone 3 feet in length and 3 inches in thickness, and this extends beyond the west end. The stone at the west end abuts on the north-side stone. It measures 2 feet 3 inches in length by 4 inches in thickness. The south side is, like the side opposite, composed of a large stone 3 feet in length and 4 inches in thickness, which abuts on the west-end stone, and the small space of 5 inches remaining between the end of this stone and the east-end stone is filled in with rubble. The interior dimensions of the cist are as follows: length 3 feet 5 inches, width 1 foot 9 inches, and depth about 2 feet. The bottom of the cist is laid with small, irregular, rounded stones.

It will be noticed that the end stones, and also the two principal side stones, are of exactly the same length, and they seem to have been laid in the above position with a view of affording greater strength, and to enable the cist to withstand the pressure from the superimposed mass of stones. On the other hand, the introduction of rubble would tend to weakness; but whether the object in view in the construction of the cist was to impart greater strength, or whether the arrangement of the stones was merely fortuitous, it would be unsafe to hazard an opinion, and I must leave the matter by simply recording the facts.

At the east end of the cist a few fragments of unburnt human bones were found, and at the north-east corner I was fortunate in finding two small fragments of pottery (fig. 5, Nos. 4 and 5). It is thus possible that the previous examiners of the cist had found an urn in pieces, and that the two fragments mentioned had been overlooked by them. The larger sherd measures about $1\frac{1}{2}$ inches square, and the smaller piece, which seems to have a slight moulding on its outer or convex surface, measures $1\frac{1}{4}$ inches in length by $\frac{3}{4}$ inch in breadth. Both sherds are about $\frac{5}{16}$ of an inch in thickness. These fragments are yellowish brown in colour; they have been well fired, and show a slaty grey in fracture. The paste has been mixed with small crushed stones and sand, and the potsherds are of a hard and compact texture.

Reviewing the results of my excavation of this cairn, I am inclined to think that the structural feature of the segment of rubble retaining wall, partially encircling the principal interment, and the introduction of rubble building into the central cist are good grounds for attributing it to a very early period.

The two fragments of pottery seem further to confirm this view.¹ They are of a much harder and more compact texture than the usual

¹ See footnote on p. 124 *re* fragment of pottery found by General Pitt Rivers in the excavation of Wor Barrow.

pottery—the beakers and food vessels—of the Bronze Age, and I think, taking all these circumstances into consideration, one might not be far wrong in ascribing the cairn to the period of transition between the builders of the Neolithic chambered cairn and the builders of the Bronze Age short cist.

Occasionally circles, either single or concentric, and segments of circles of large stones have been found buried under the earth forming a tumulus, or under the agglomerated mass of small stones forming the bulk of a cairn,¹ but I am not aware of any built wall, such as was found partially enclosing the principal cist in the Inverlael cairn, having ever before been noted in Scotland.²

¹ Dr Joseph Anderson (*Scotland in Pagan Times*, p. 4) mentions an example of a large cairn at Collessie in Fife, where a segment of a circle of single stones was found to partially enclose the central cist.

Mr J. R. Mortimer, in his *Forty Years' Researches in British and Saxon Burial Mounds of East Yorkshire*, p. 100, gives a description of a barrow (No. 55) in which a single circle of large stones—not, however, quite complete—occurs.

Mr A. O. Curle, Director of the Museum, has drawn my attention to a further notice of the occurrence of a stone circle discovered in a tumulus excavated by Mr Willoughby Gardner, F.L.S., at Eglwys Bach, Denbighshire, an account of which is contained in *Archæological Research*, by the Nant Antiquarian Society (being the Hon. Secretary's Report for the years 1910–1913). The tumulus is a large one, measuring 72 feet in greatest diameter, and is 5 feet 6 inches in height.

“Buried within the body of the mound, and at some 15 feet from its outer edge, a number of large stones were encountered by the excavators. These were . . . found to form a stone circle, which was erected upon the original ground surface.” It is constructed of stones of various sizes. “The larger ones are irregular boulders set upright upon or sunk in the ground at distances from 3 feet to 6 feet apart,” and in two instances it was noticed that “between these upright stones,” for short distances, “smaller stones are filled in, sometimes ‘uprights’ and sometimes ‘horizontals,’ the latter placed one above another, so as to form a rough wall.” Three interments were found in this tumulus, one primary and the other two secondary. All were by incineration, and from the relics and cinerary urn brought to light, Professor Boyd Dawkins, to whom they were submitted, considers the tumulus referable to the late Bronze Age.

² Wall-like enclosures were, according to Bateman (*Ten Years' Diggings*, p. 63), “commonly adopted by the Britons in the construction of their tumuli, by first making a circle of large stones, within which the interments were placed, and then covered with an accumulation of stones, until a mound was formed, surrounded

I cannot conclude my paper without mentioning that it was entirely through the praiseworthy initiative of Lady Fowler that I am able to place on record the interesting phenomena disclosed by the excavation of this cairn. Had the roadmen not been promptly stopped in their work of demolition, a very short time would have sufficed to complete its destruction, and all details would have been irretrievably lost.

by a kind of wall of one or two courses, consisting of the aforesaid circle; the whole was then covered with earth. . . ."

In *Excavations in Cranborne Chase*, by Lieut.-General Pitt Rivers, vol. iv. p. 82, he mentions, in describing the excavation of two primary interments in Wor Barrow, that "to the west of the bodies . . . is a line of nodular flints, which were placed together like the foundation of a wall." The only relic of any description found referable to these interments was a small fragment of "coarse British pottery," which General Pitt Rivers considers as "probably of the Stone Age" (see p. 86 and Plate 257, fig. 19).

Dr Joseph Anderson (*Scotland in Pagan Times*, p. 229) remarks that "in the cairns and circles of the Bronze Age there is occasionally some approximation to a structural character. . . ."

II.

REPORT ON THE EXCAVATION, IN SEPTEMBER 1913, OF A VITRIFIED FORT AT ROCKCLIFFE, DALBEATTIE, KNOWN AS THE MOTE OF MARK. BY ALEXANDER O. CURLE, DIRECTOR OF THE NATIONAL MUSEUM OF ANTIQUITIES.

The Mote of Mark is a small rocky eminence situated immediately to the westward of the hamlet of Rockcliffe, and overlooking the estuary of the Urr. From the foreshore it rises very abruptly with a rocky escarpment to a height of about 100 feet (fig. 1), while from the land-



Fig. 1. The Mote of Mark, from the Shore of the Estuary.

ward side it attains an elevation of some 75 feet (fig. 2), and that, except for the last 20 feet or so, by a comparatively easy gradient.

To the north-westward higher hills hem it in and cut off any prospect of the interior of the country, while south-westward the mountainous masses of Screel and Ben Gairn delimit the horizon in that direction. Only down the estuary (fig. 3) to the Solway is there an



Fig. 2. The Mote of Mark, from the Landward Side.



Fig. 3. View from the Mote, looking over the Estuary.

unrestricted view, and thence one may gaze on a clear day far out beyond Heston Isle to distant St Bee's Head, on the Cumberland coast.

The summit of the hill presents a fanciful resemblance to a human foot sole upwards, with a rock at either end to represent the heel and the ball, a hollow between, and a toe projecting out at one end towards the north-west. The main axis lies west-north-west and east-south-east, with a measurement of 206 feet; the breadth, greatest at the west end, varies from 130 feet to 70 feet. From the east end, round the side facing the sea, to the western extremity, the flanks are much broken with outcropping rock, and in places precipitous; elsewhere, though the upper part of the slope to the summit is at all points steep, it is accessible without much difficulty. The general appearance of the hill, especially when viewed from the east, is sufficiently suggestive to account for the term "mote" having been applied to it, without presuming its occupation at the period when that term gained currency.

The fort on the summit has long been reputed to be vitrified, and towards the end of the eighteenth century it attracted the notice of Riddell of Friar's Carse, who wrote in a letter¹ to Mr Gough in 1790 concerning it, that a clergyman in the neighbourhood, sending some specimens of vitrified stone, had said that the fort was full of rubbish, and surrounded with standing corn, that "it would take a man one day at least to clear it," and that it would be worth clearing out.² Mr Coles, describing the fort in the *Proceedings*, vol. xxvii., 1893, says that during three separate and careful examinations of the mote he had never been fortunate enough to find any stonework exhibiting fusion; while Dr Christison, in his *Schedule of Vitrified Forts in Scotland*, dismisses it with the remark, made on Mr Coles's authority, that there

¹ Published in *Archæologia*, x. p. 147.

² A further statement in the letter that "it" contained a heap of stones of the form and size of a goose-egg each, though quoted by Mr Coles (*Proc. Soc. Ant. Scot.*, xxvii. p. 93, n.) as applying to the Mote of Mark, from the context evidently refers to Castle Gower, another vitrified fort a few miles away.

was none to be seen. In truth, previous to the excavation exceedingly little was to be seen; but I was fortunate enough, when examining the fort for the Ancient Monuments Commission, to find vitrification in two places.

The hollow between the rocks above referred to is restricted in breadth to about 30 feet adjacent to the mesial line of the summit, and increases to about 50 feet towards the edge of the hill. Over the greater part of this area, previous to excavation, grew a luxuriant crop of nettles, and where the rabbits had burrowed, soil had been brought to the surface, peculiarly dark in colour, and containing an unusual quantity of animal bones. The soil was loose and deep, and the general indications were those of a long, continuous occupation of the site. At about the highest level of the area between the rocks a natural terrace passes along the northern side below the west rock, dipping slightly to the toe. All along the flanks of the hill, especially conspicuous on the more accessible north side, lie masses of boulders to a depth of many feet, but showing at no point any sign of construction; that these are not merely "rickles" of stone thrown down to hamper the approach of a foe, but the ruins of a massive wall which at one time engirdled the summit, is sufficiently vouched by the fact of their occurrence at the base of the precipitous and inaccessible rocks on the south-west. The exact position of this wall, as will be seen from the following account, was not satisfactorily ascertained, but on the north flank, where there was a comparatively easy approach to the summit by an oblique track from the eastward, the mass of material was probably sufficient for two walls, with a space between, an arrangement which the disposition of the stones seems to indicate.

Around the outcropping rocks at either end hardly any trace remained of defensive works, save an odd stone or two protruding through the hard dry turf at the east extremity, a patch of vitrification exposed and much weathered, and a boulder or two, the heads of which appeared on the surface at the west end. Along the north side, at

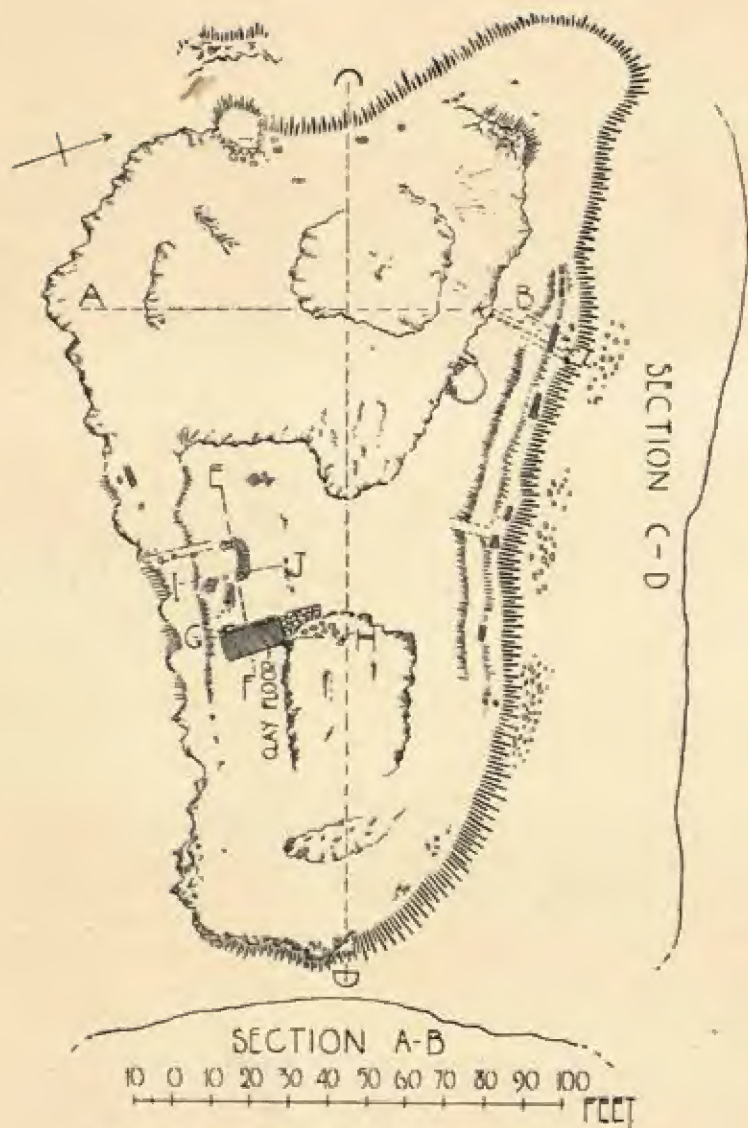


Fig. 4. Plan and Sections of Summit of Mote of Mark.
VOL. XLVIII.

the edge of the terrace beneath the west rock, commencing where indicated on the plan (fig. 4), and continuing eastward for over 100 feet till it meets the outcrop, is distinctly visible a low broad rampart. It narrows considerably at its western extremity, but elsewhere along its course, as ascertained by sections, it has a width of 14 or 15 feet. Along the south side, at the edge of the hollow, it is also traceable,



Fig. 5. Sectional View of Rampart.

being lost to west and east where the rock comes to the surface. At each point where a section was made through it, the construction was the same. At the outer edge there appeared a kerb of boulders; behind this rose a structureless rampart of earth and stone (fig. 5), containing, at 3 feet 6 inches or thereby inwards, a roughly built wall about 1 foot 6 inches in thickness, showing at most a height of some 3 feet, and firmly coagulated with vitrified matter from top to bottom (fig. 6). Adhering to some of the stones there appeared to

be a quantity of coarse sand, giving the surface a granular texture, and a considerable amount of gritty sand was observed in the composition of the rampart. In places the vitrified matter had run in a stream down the wall, apparently without coming into



Fig. 6. Elevation of Wall, showing Vitrification.

contact with any opposing surface, as may be seen from the character of the detached blocks shown in fig. 7. No vitrification appeared in the rampart either in front or in rear of this wall, and it is thus a fair assumption that the wall was built and vitrified previous to the erection of the rampart against it, it being otherwise impossible to account for the solidification of the wall throughout

its entire height, and for the complete absence of vitrified matter from any other part of the rampart. For about 1 foot back from the wall the sub-soil was burned red, as also was sand which lay above it near the base. On neither face of the wall was there any appear-



Fig. 7. Vitrification on Detached Blocks.

ance of charcoal, which might have been left from brushwood piled against it to form a fire. The stone of the wall is for the most part a grey granite, which has run freely under the action of the heat. Wherever the vitrification was discovered it is shown black on the plan, and sufficiently regular was its incidence as to leave no doubt of its original continuity and of its structural character. The north

rampart was cut into at six places, and in each the vitrified wall was met with. On the south side it was laid bare in three places, and though at the west end the wall was seemingly much destroyed, vitrification was found in a sufficient number of instances to enable



Fig. 8. Vitrification, bearing Impression of Coarse Fabric.

its line to be traced along the base of the summit rock, but not around the projecting point, which apparently had been left outside the enceinte. On one piece of vitrified stone picked up casually, there seems to be a distinct representation of a coarse woven material, or sacking, such as might have been made by the liquefied stone flowing into the impression of the fabric made on wet sand (fig. 8).

On the top of the same piece is a mark as if made by a piece of wood. Fig. 9 shows a view of the wall laid bare on the north side near the east end. Here, firmly embedded in a vitrified cement, is a coping, or crown of large round boulders, the upper surfaces of which, however, show no signs of having been affected by intense heat.



Fig. 9. View of Wall on North Side of Mote of Mark.

Towards the west end of the north side a broad section (K—L on sectional plan, fig. 10) was cut through the rampart, and in addition to the features already commented on, carbonised wood, seemingly the remains of stakes or beams, was found both in front and rear of the vitrified wall, but, as shown on the plan, some 3 feet back in either case.¹ The surrounding soil was carefully removed from the

¹ The condition of this wood, which was oak, was due to natural decay and not to combustion, as I am informed in a report from the Regius Professor of Botany, who kindly had it examined.

carbon, in order to ascertain the character and direction of the original woodwork, but not much satisfaction was obtained, as the remains were very fragmentary. The carbon occurred at the very bottom of the

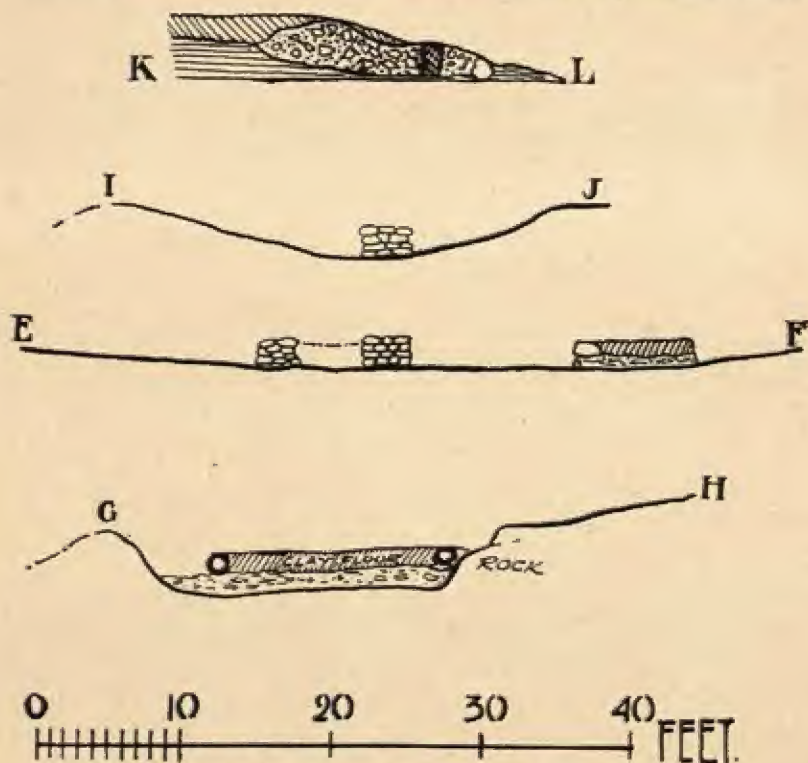


Fig. 10. Sectional Plans of Structures in Mote of Mark.

rampart, resting on the sub-soil. Of the three masses noted outside the vitrified wall, the middle one of the three seemed without doubt to have been a post; the two others, however, lay somewhat obliquely, and possibly were the remains of planks or beams, but, if the latter, they had been of slight dimensions. Behind the vitrified wall carbonised

remains were met with three times also; in the two cases where they were found nearest to the wall, the remains seemed to be those of posts, while the innermost mass of carbon appeared to have been a broad beam or plank which rose up obliquely through the rampart. In each of these three cases last mentioned the wood had been set in a bed of dark soil, and the sand adjacent was reddened as if by the action of heat, but there was no sign whatever of any part of the superimposed rampart above the remains of the wood having been so affected. The greatest height to which the carbon was traceable was 1 foot 4 inches. The other sections cut through the rampart were all narrow, and no trace of timber was observed in any one of them.

At the extreme west end, where a steep grassy slope gives on to a rocky platform some 20 or 30 feet below, a depression was observed crossing the rampart. This, on being examined, proved to be a gap about 8 feet broad between two low outcropping rocks, which had been crossed by a wall, apparently some 4 feet thick, and formed of large stones, in a curve, with its centre to the outside. A little out from the face of the wall, and set in a straight line between the two rocks, were the carbonised remains of three posts, as shown on the plan (fig. 4). It is possible that there may have been a gateway here, but the removal of all superstructure from the rock, and the levelling of the wall to its foundation, had destroyed any more definite trace of it. On the south side of the enceinte remains of woodwork were also observed, but these occurred well within the line of the rampart.

On the south side of the central depression, between the two rocks, lay an area on which, as already stated, the soil was peculiarly black, free, and productive of a dense forest of nettles. A recess in the western rock extended this area somewhat in that direction, and though the east rock does not reach across the summit, surface indications showed that the area of occupation did not extend at any point more than some 15 feet east of the line of its western face; excava-

tion further revealed the fact that a low wall of outcrop, running roughly parallel with the south edge of the summit, cut off the area to northward. Thus, making allowance for the rampart and for a natural bank curving round from the rock on the west, the area, where the undoubted evidences of occupation predominated, measured some 55 feet in length by 25 feet in breadth (see sections I—J and E—F, fig. 10). Over the greater part of this area, except where remains of structures were encountered, there was a depth of nearly 3 feet 6 inches of soil, containing very large quantities of the bones of domestic animals, sheep, oxen, and pigs, some of them split for the extraction of the marrow, and one tine of the antler of a red-deer. The absence of shells of edible molluscs was remarkable, especially as cockles are to be found in abundance in the estuary near by.

The principal structural remains were uncovered towards the east end of the area. Here, as shown on the plan, at a depth of 14 inches below the present surface level, a floor of hard compacted clay was encountered, commencing some 4 feet back from the rampart, and extending inwards to the edge of the rock for a distance of 17 feet, with a breadth of from 6 to 7 feet, an average depth of some 12 inches, and faced, to the northward only, with a row of large boulders (Sec. G—H, fig. 10). Though there was no kerb to the south, many large detached stones lay adjacent. Above this floor was an almost complete absence of bones and relics, but beneath it, both occurred throughout the deposit of 7 or 8 inches which overlay the natural surface, thus clearly establishing the secondary character of the floor. At its north end, where it approached the rock, the floor abutted on a foundation of very large boulders firmly planted on the original surface with a little clay showing between them, and having its western face in alignment with the front of the clay floor. The extent of this foundation it was impossible to ascertain, but from the number of large stones, some of them undoubtedly *in situ*, on the low end of the rock, there is no doubt that it extended on to it, possibly in continuation of the

structure represented by the clay floor. Many of the stones were very large, one oblong water-worn boulder measuring 3 feet 9 inches by 10 inches by 14 inches. On the rock the stones covered a shallow stratum of dark soil, which contained some small fragments of pottery moulds. The only portion of a quern found, part of the upper stone of a rotary one, was recovered among the stones at the edge of this rock. To the westward of the clay floor, at a distance of 11 feet 6 inches, and set at right angles to it, were the remains of a building, three-sided, and slightly curved on its longest side, formed of dry-built masonry, and measuring within the walls some 6 feet by 4 feet. The wall at thickest had a breadth of 3 feet : it was laid on the hard sub-soil, and rose to a height of 2 feet. Below the top course of stones was a layer of soil about 6 inches in depth, containing numerous bones. It is possible that this building was a forge or workshop, as remains of crucibles, larger and thicker than those found elsewhere, were unearthed in its immediate vicinity, also iron objects, pieces of hematite, and slag. On examining the ground to the west of it at the lowest level, there was laid bare a hard compacted floor of soil about 1 foot in depth, in which occurred a few pieces of bone, a layer of black carbonised matter resembling soot, and much lime, which had probably been used in connection with the smelting of iron. To the north of this building, and about 8 feet out from the base of the rock on the west, a small circular hearth, with a diameter of some 3 feet 6 inches, formed of clay, burned red to a depth of about 4 inches, was uncovered. Only at one point, towards the north, did any surrounding stonework remain, and that a small area of laid stones with a single stone, a foot or thereby in height, set on end adjacent to the hearth. A single fragment of buff-coloured domestic pottery was found upon the clay.

In front, that is, to the westward of the large clay floor, and situated comparatively near the inner face of the rampart, as indicated on the plan, two beds of pure sea-sand were met with. The longest measured

7 feet in length by 2 feet 9 inches in breadth and 1 foot 8 inches in depth, and occurred at a depth of 1 foot 8 inches below the present surface, being covered with a rough layer of stones. The second bed, a little to the southward, measured 5 feet by 4 feet by 13 inches, and occurred 2 feet 2 inches below the surface. The sand in both beds was remarkably free of foreign matter, and a small deposit of shells to the west of the second was of just such shells as might have been removed from it by riddling. In the space between the clay floor and the nearest sandbed a certain amount of carbonised wood was discovered, the various remains apparently lying parallel. Partially on the clay floor, also extending beyond it towards the rampart, and traceable for a distance of some 5 feet, was a rail or post, lying displaced; a foot or so to the west lay another; while westward, and adjacent to the sandbed, the remains seemed to be those of upright posts. At the east end of the sandbed a post 4 inches in diameter was found, from which a rail had extended out towards the rampart. The post had been pointed, and was wedged in place with sharp fragments of stone. As it terminated some 10 inches above the bottom of the sand, it was evidently secondary, as also in all likelihood were the other remains of woodwork adjacent. One other site had evidently been occupied as a dwelling, though it showed little or no remains of structure. It lay on the north terrace at the base of the rock, and was the most sheltered position on the whole hill-top, a fact which led to the examination of the spot and the subsequent discovery, for no depression gave a clue to it on the surface. The dwelling had been circular, with a diameter of 10 feet or thereby, and its floor at lowest level, in the centre, lay some 1 foot 8 inches below the natural surface. The floor was much blackened with charcoal, and from it were recovered one or two small pieces of wheel-made pottery and a fragment or two of burnt bone. Against the rock, and, especially in an angle formed by a projecting point, there were traces of dry-stone building. Some fragments of crucibles were found on the site, a few small pieces of vitrified matter,

a piece of amber-tinted glass, with two parallel opaque white lines on it (fig. 17, No. 12), at a depth of 1 foot 10 inches below the surface, and at 1 foot down a remarkable sub-oval disc of greenish glass (fig. 17, No. 13), inlaid with spots of opaque glass. The position of this hut circle leaving only a space of some 5 feet between its outer edge and the rampart, suggested that it might have been used as a guard chamber, presuming that the main entrance to the fort was a little further to the west, but no indication of an entrance or gateway was found.

At various places to west and east of the main area of occupation exploratory trenches were dug, but no trace of a level of occupation was found. Equally void of results were trenches to the south of the east rock; diagonally through the hollow in the centre between the rocks; and across the projecting plateau at the west end. Over the whole of the area bisected by the sections E—F and I—J (fig. 10), the soil lay to a depth of about 3 feet 6 inches, diminishing in depth as it approached the limits of the area. The accumulation of soil since the site was occupied was apparently about a foot, as very few relics were found in this top stratum, and at places, especially between the south end of the clay floor and the sandbed, it overlay a deposit of stones lying unevenly and seemingly not *in situ*. From this level downwards, but chiefly in the upper portion of the deposit, there was recovered a large and varied collection of relics, consisting of flint flakes, portions of moulds of baked clay, fragments of glass, pieces of crucibles, objects of iron, of bone, and of bronze, and shards of domestic pottery.

Of these relics the most remarkable are the moulds and the glass. The fragments of the former were very numerous, and were recovered to some extent over the whole area, and at varying depths; but the greater number came from the immediate vicinity of the clay floor, and at a depth of from 14 inches to 2 feet, and although also occurring in the lower soil to a depth of 33 inches, they were there much scarcer.

Careful observation of the specimens recovered from higher and lower levels revealed no distinction. They were formed of fairly fine clay, baked to a dull brick-red colour, and coated on the upper surface, forming the actual matrix of the mould, with a slip of finer and mouse-coloured material. The majority of the fragments were exceedingly small, and showed no remaining portion of the matrix, but there were recovered, nevertheless, a large number of pieces which still bore some trace of pattern or design. No single perfect mould was found, and it is possible that a mould may not have survived many castings, or may even have been destroyed by each operation. According to the character of the objects they were designed to reproduce they may be divided roughly into three classes: (a) penannular brooches, crosses, and other ornaments richly decorated with patterns in Celtic art; (b) penannular brooches of Celtic type, but plain, or little if at all enriched; and (c) simple pins, comb-like objects, and articles of unascertained use. Of the first class there are pieces of moulds for two expanded ends of large brooches (figs. 11, 12, Nos. 1 and 3), each beautifully ornamented with a simple pattern of interlaced cords in unbroken plaits. The larger piece has been triangular, with two concave and one convex side, and has had a small boss at the apex, while the smaller has been bordered with a moulding enriched with a feather or herring-bone ornament. Another fragment (figs. 11, 12, No. 2) is evidently a portion of a mould for a circular plaque, presumably divided by a cruciform design of four cusped arms radiating from an encircled central boss into four panels, each filled with interlaced ornament. If the assumption as to the completed form is correct, the object to be produced from this mould presented an affinity to a plaque, believed to be a harness-mounting, found in an Anglo-Saxon cemetery at Faversham, Kent,¹ and now preserved in the British Museum. Though slightly larger, and with an enriched border, the main design of that ornament consists of a cruciform figure with a central boss, and four panels of

¹ See *Archæologia Cantiana*, vol. i. p. 42, Plate iii.



Fig. 11. Fragments of Clay Moulds from Mote of Mark (+).



Fig. 12. Casts from each of the Fragments of Clay Moulds shown in Fig. 11.

interlaced work filling the spaces between the arms of the cross. On it the bands which form the interacements are similar in breadth to those on the Celtic ornaments (the Anglo-Saxon band as a rule being broader), and, further, their surfaces bear the double incised lines to which attention will be drawn hereafter. Figs. 11 and 12 Nos. 6, 8, and 11, are possibly the arms of crosses, and No. 4 is a small boss within a beaded circle. It is noteworthy that all the pieces of moulds for the richest ornaments, those comprised in class (a), came from the front or west side of the building represented by the clay floor and the stone foundation, and especially towards its north end, while the moulds of class (b), the less highly ornamented objects, came for the most part from the east or opposite side of the same site, chiefly from a depth of about 2 feet, but some from the very bottom level. The mould most nearly complete (figs. 13, 14, No. 8) belongs to the latter class, and has been for the manufacture of a pair of small penannular brooches with lozenge-shaped terminals. A mould for a somewhat similar brooch was found at Dunadd, and is preserved in the Museum.¹ Another brooch, the mould for which is also fairly complete, has differed from the last only by having four small projecting points on the lozenge-shaped terminations (figs. 13, 14, No. 4). Another (fig. 14, No. 6), of which about one-half only remains, has been for a penannular brooch which has had disc-shaped terminals, ornamented seemingly with three trumpet ornaments on each disc. Fig. 14, Nos. 5, 10, and 11, have possibly been parts of moulds for small crosses, the portion in each case here represented being the stem. In this class may also be included moulds for small, flat oval rings, each decorated with a row of projecting points (figs. 13, 14, Nos. 7 and 9). The objects comprised in class (c) were not actually confined to any particular part of the main excavated area, but were found generally all over it, though with a preponderance, however, to the neighbourhood of the clay floor. The pin moulds, of which the fragments are numerous, appear to have been for pins of

¹ *Proceedings*, vol. xxxix. (1904-1905), p. 313.



Fig. 13. Fragments of Clay Moulds from Mote of Mark ({}).

VOL. XLVIII.



Fig. 14. Casts from Clay Moulds from Mote of Mark (1).

moderate length, with flat, circular, nail-like heads. A pin of bone, apparently used to form the matrix, was found, and is shown in fig. 15, No. 1, along with the matrix (fig. 15, No. 2), which it had evidently been used to fashion. As a rule each mould contained matrices for two such pins, but, in one case, for three. Among the relics from Dunadd there is the lower portion of a mould which appears to have been used for the manufacture of somewhat similar pins, and a mould for a pin of an earlier type was found in the Broch of Lingrow in Orkney, and is preserved in the Museum. Though the majority of the pins have been of simple pattern, there are moulds for two of a different character (fig. 14, Nos. 2 and 3). No. 2 represents a pin which seems to show in the oval form of its head, with central circular boss, the tradition of a design frequently made use of by the craftsmen of the La Tène or "Late Celtic" period. The outer margin has been recurved at the base of the head, suggesting that it is a penannular derivative. It may be compared with the pin of a brooch in the National Museum, Dublin.¹ Fig. 14, No. 3, represents a pin with a flat circular head having a raised disc in the centre, and finished with a collar at the junction of the pin with the head. The mould shown by the cast (fig. 16, No. 14) has been for two hemispherical objects or bosses; from the more perfect the original surface has been worn away, but on the fragment of the other traces of interlaced ornament may still be seen. The purpose of the object (fig. 16, No. 12) is not obvious; the mould shows excrescences where the dark parts appear in the illustration, which were probably intended to form beds for jewels.

For casting small comb-like objects, probably for carding, numerous fragments of moulds (fig. 15, Nos. 5 and 6), came to light from various levels; also at the lowest level of occupation, in what appeared to be a well-trodden floor, to the west of the rude three-sided building, one of these actual articles was found (fig. 15, No. 4). It is formed of bronze, $2\frac{1}{2}$ inches in length with 12 teeth projecting from a narrow

¹ *Guide to the Celtic Antiquities of the Christian Period* (Coffey), p. 22, fig. 27.



Fig. 15. Clay Moulds and other Objects from Mote of Mark (†).



Fig. 16. Casts from Clay Moulds from Mote of Mark (†).

strip of metal. From the somewhat scalloped edge which the strip of metal presents on either side, it is fairly evident that the original pattern has been made of a pliant material, such as hide or leather, with pins pressed through it.

The art displayed by the more elaborate ornaments, which these moulds were employed to fashion, is that of the best epoch of Celtic design of the early Christian period. The interacements form simple knot work, and show no trace of the elaboration subsequently evolved by imaginary breaks and junctions of the bands, and so richly portrayed in the later monuments of stone, nor do the patterns show any suggestion of zoomorphism. The survival of certain features of design, late Celtic, and belonging to the pre-Christian period in their most general application, such as the divergent spiral (figs. 11 and 12, No. 10) and the C curves, still clearly recognisable in the much effaced mould, for a plaque (fig. 16, No. 9), as likewise the pattern shown in fig. 16, Nos. 3 and 6, all point to an early date for these moulds in the evolution of the phase of Celtic art to which they belong. That date I incline to place somewhere in the ninth century. The interlacing style of design was first introduced into Britain in the seventh and eighth centuries, and gradually displaced the earlier forms of ornament distinguished by trumpet patterns, spirals, and scrolls, until in the eleventh century it had almost superseded them. Though knot work was not infrequent in the art of classical Rome, and is to be met with in that of Greece, it was in Italy, from the eighth to the eleventh century, that the style on the Continent was most in vogue, and there was employed as an architectural enrichment.¹ The actual source from which these interlacing designs reached this country is uncertain, but that they came in the train of the Christian missionaries, and developed under the skilful hands of monastic scribes, is hardly open to doubt. Whether the designs were brought to the Celtic craftsman

¹ *Guide to the Celtic Antiquities of the Christian Period preserved in the National Museum, Dublin* (Coffey), p. 8.

directly from Italy, or, as Mr Coffey suggests,¹ with a common Byzantine origin flourished indiscriminately throughout the Christian world of the sixth to eighth century as "part of the repertory of ornament and symbolism of that period," is a problem to which the discovery of these moulds may lend, perhaps, a little interest. One feature which is held to distinguish particularly the knot work of the Italian school from that of the Celtic is the division into three, of each band or strand forming the interlacement, by the incision along its upper surface of two parallel lines, while the bands of the characteristic Celtic designs are either divided into two by a single line, or are left plain. Though a few exceptions occur in England, the absence of this feature from all existing examples of the native art is so general, either here or in Ireland, as to lead to the conclusion that the Celtic interlaced patterns did not come through Italy.² But one remarkable feature of the interlacements on the ornaments to be produced from these moulds is the frequency of this very triple division resulting from the double incised line. In certain objects of Anglo-Saxon metal-work the double incised line is also found, and it may be that the occurrence of this feature in the south-east corner of Galloway may be due to Teutonic influence radiating from Northumbria, to which kingdom Galloway is known to have been in some measure subject about this time. But, except that the circular plaque already referred to bears an analogy to a relic from an Anglo-Saxon cemetery in Kent, there is nothing in the forms of any of the brooches, as indicated by the fragments, or in the character of any of the other objects, save only the glass, which is in any way suggestive of an Anglo-Saxon connection.

To give some idea of the numbers of pieces of moulds recovered, in addition to the fragments which it was thought advisable to bring to

¹ *Guide to the Celtic Antiquities of the Christian Period preserved in the National Museum, Dublin*, p. 8.

² *Ibid.*, p. 13.

the National Museum, a box, measuring 13 inches by 11 inches by 7 inches, filled, was left with the owners of the site.

Many pieces of flint were found, and for the most part in the upper levels. Though the greater number of them are chipped, only a very few show signs of flaking such as belongs to a flint-working period, and as no other objects were found in the excavation that could conceivably have been used for strike-lights, a notable exception on a site where so much combustion must of necessity have taken place, it is suggested that these flint flakes had been used for that purpose. There is no natural flint here, and a trade in such a commodity may be assumed, which may even have brought prehistoric artefacts into circulation for a secondary purpose.

Of glass, altogether twenty-five pieces of undoubted antiquity were found, and of these twenty-two probably represented fourteen different vessels. Six of them are portions of rims; all are very small segments, but two are of sufficient size to indicate diameters for the mouths of the glasses to which they belonged of $2\frac{5}{16}$ inches and $2\frac{1}{2}$ inches respectively. All the pieces thicken slightly to the lip, showing a rim with an elongated oval section like that of the seed of a pear. The rim does not appear to have been formed by folding over the edge, as is usually the case with modern rims. One piece is smoke-coloured, and the others are of varying greenish tints, that of most distinctive colouring being of a shade of olive green. Two of the vessels (fig. 17, Nos. 1 and 2) have been encircled with threads of white opaque glass inlaid on the outside, so fine that on one of the fragments nine of such threads occur in a surface half an inch in breadth. In addition to the threads, on one of these pieces (No. 1), the actual edge is of white opaque glass. One small fragment (fig. 17, No. 16), in place of being decorated with lines of white opaque metal, shows the remains of two parallel lines produced by eroding the surface, probably by the action of sand.

There are two distinct classes of glass among the fragments, belong-



Fig. 17. Fragments of Glass from Mote of Mark (1).

ing probably to two different types of vessels. The characteristics of the one class are extreme thinness and inlaid opaque lines, either parallel and horizontal, or wavy (fig. 17, No. 8), also variety of colouring, one piece being of a beautiful sapphire-blue tint (fig. 17, No. 10) and another mauve (No. 7). The glass of the other type is rather thicker, of a very clear amber colour, and while two pieces have white lines let into them (fig. 17, Nos. 12 and 14), the lines are less regular than in the thinner glass; in two fragments (fig. 17, Nos. 17 and 19) also a rich effect has been produced by the undulation of the surface, and on one by the formation of a spot of thicker metal about the size of a pea. The pieces of the first class have probably belonged to straight-sided beakers, as they curve markedly only in one arc, while the second class display a double curvature indicating a bowl-shaped form.

As these fragments were found at similar depths to the pottery moulds, it may be assumed that they are contemporaneous and that they afford us an indication of the vessels in use during a period subsequent to the date when Christian observances put a stop to the inclusion of grave goods in tombs.

Among the Franks on the Continent and the Anglo-Saxons in England that practice has furnished us with various examples of the glass-maker's art down to about the seventh century. Subsequent to that period, until we attain to definite historic times, our knowledge of this art and of the kindred industry of the potter is much less complete.

The glasses in use among the Anglo-Saxons were of three main forms: straight-sided funnel-shaped beakers, small round-bottomed globular cups, and tumblers remarkable for the horn-like lobes affixed to the outside of them. The last named need not concern us here, as no trace of them was found. Both the other forms, however, appear to be represented by the fragments under discussion. The inlaid threads and the wavy opaque pattern shown in fig. 17, Nos. 1, 2, and 8, are

both to be seen on an Anglo-Saxon funnel-shaped glass from Bifrons, Kent, preserved in the Maidstone Museum, also on a beautiful little glass of similar form found in a Frankish cemetery at Namur, and preserved in the Musée du Cinquantenaire at Brussels.

Since we have no record of the discovery of similar glass in Scotland, we must look elsewhere for the source of its production. Similarity in certain features to the beakers of the Anglo-Saxons and the Franks points to a common origin. As regards England, it is doubtful if many of the vessels in use in Anglo-Saxon times were actually made there, and the fact that Benedict Biscop, as related by the Venerable Bede, actually sent to Gaul in the year 675 for glass-workers for the glazing of his church and monastery at Wearmouth, is proof of the lack of that industry at least in Northern England at that date; and notwithstanding that the glass-makers not only came to Wearmouth to execute the work required, but also communicated to the English their skill, the lesson was soon forgotten, for in 758 Cuthbert, Abbot of Jarrow, wrote to the Bishop of Mayence, desiring if he had any man in his diocese who could make vessels of glass well that he would send him on, "for," he added, "we are ignorant and helpless in that art."¹ The chief region for the manufacture of these glass beakers in the sixth and seventh centuries is believed to have been that of the Meuse. Specimens dated as late as the ninth century, the assumed period of their use on the Mote of Mark, are very rare.² Ten beakers, however, and many fragments were discovered in the years 1876 and 1877, when a cemetery was explored on the Island of Björko, in Lake Mälär, near Stockholm, associated with coins of the ninth century.³ Six of these glasses were funnel-shaped, and most were of greenish colour. One, bowl-shaped, with a neck, was of dark-green glass, and was covered over with small bosses the size of peas,

¹ *Old English Glasses* (Hartshorne), p. 113.

² See *Das Glas im Alterthum* (Kisa), p. 919, fig. 394.

³ See *Månadsblad*, vol. 1878, p. 681; vol. 1880, p. 41.

in this respect showing some resemblance to the amber-coloured fragment mentioned above. A number of them, moreover, had coloured rims, analogous to the white rim on the fragment (fig. 17, No. 1) from the Mote of Mark.

In addition to the fragments of drinking-vessels there was found a small piece of greenish glass, perfectly flat, which, from being obscured on one face, as well as from its colour, strongly resembled Roman window glass, but it is thinner and of more regular thickness than that material. It was found in the vicinity of the clay floor, to the east of it, and at a depth of 1 foot from the surface, and one is tempted to wonder if we have not here a fragment of very early window glass.

While excavating the hut circle on the north side of the west rock at 1 foot below the surface, a very unusual object of glass (fig. 17, No. 13) came to light. It is an oval plaque of green colour, $\frac{1}{4}$ inch in thickness, measuring superficially $\frac{7}{8}$ inch by $\frac{3}{4}$ inch, and obscured on both faces. Into one face, after the method of Champlevé enamelling, had been inserted a number of circular spots of white and yellow enamel placed irregularly. A trace of metal adhering to the margin at one end shows that this object has been a setting in some metal mount. The method of enamelling by this process in glass is to be seen in certain double-cone beads, also of obscured green glass. Two of these beads are in the National Museum; one, recently acquired, found near Earlstoun in Berwickshire, shows the beads, curving in form, for the enamel; while the other, from a Viking burial at Ballinaby, Islay, and thus probably of a date approximately near that of the moulds and glass under discussion, still retains much of the enamel, also yellow, in the channels prepared for its reception.

The only other object of glass to be noted is a small quasi-cylindrical bead of peacock-blue colour, measuring $\frac{9}{16}$ inch in diameter, and perforated with a hole very large in proportion to its size. A somewhat similar bead was found at Dunadd, and is preserved in the Museum.

Numerous fragments of crucibles of clay were found, but no complete vessel. They were of two distinct varieties, the one small, with a wall varying from $\frac{1}{16}$ to $\frac{1}{8}$ inch in thickness, pointed to one end, much the shape and size of a small hen's egg with the top off; the other considerably larger and thicker, varying from $\frac{1}{4}$ to $\frac{3}{8}$ inch in thickness, with a slight diminution at the mouth, and furnished with a lead for pouring off the metal. The angle formed by the convergence of the sides to the lead, and the flatness of the curve of other fragments, suggest that this type has been triangular. A complete segment of one of the smaller crucibles remains, showing a height of $1\frac{1}{2}$ inches, and while no such complete part of any of the larger vessels was obtained, the piece showing the greatest height measures $3\frac{1}{2}$ inches. None of the fragments of either class show a tang or handle for lifting the crucible by, as found on some of those from Dunadd. The clay of which both classes have been formed is fine, and is now of a greyish hue. Many of the fragments have traces of fused metal adhering to them. Most of the fragments of the smaller sort were found near the stone foundation at the north end of the clay floor, especially on the west front, where also several small pieces of bronze were unearthed, while the majority of pieces of the larger kind came from the neighbourhood of the three-sided building, thus indicating that different processes were in use at the two spots. It was noted also that most of the iron objects, hematite and slag, were found in the same region as the larger crucibles. In addition to the foregoing, there were discovered remains of other vessels of clay (figs. 18-20) which may possibly also be regarded as crucibles. They are much thicker than the foregoing, are flat-bottomed and dish-shaped. One of them (fig. 18) is angular in shape, indicating that it has been of a rectangular ($\frac{2}{3}$) form. The bottom of this one measures 1 inch in thickness, and the side $\frac{7}{8}$ inch. Like the others of this class, it appears to have been fashioned with a double wall all over, the two layers of clay being clearly distinguishable in the section of the bottom and also on the

side where the outer one has sealed off. The material of this vessel is a grey clay, and the vesicular condition of the outside indicates that it has been subjected externally to great heat.



Fig. 18. Portion of Crucible of Rectangular Form ($\frac{1}{2}$).

Fig. 19 represents another shard apparently of a similar object, but formed with a smooth pink body. A portion of the wall remains,



Fig. 19. Portion of Crucible of Oblong Form ($\frac{1}{2}$).

showing a height of $2\frac{5}{8}$ inches, a thickness of 1 inch at bottom, and $\frac{7}{8}$ inch in the wall, diminishing slightly to the rim, which is rounded.

This has been a fairly large dish, as the portion of the bottom remaining measures 2 inches across. It has not been circular, as the curve of the remaining portion of the wall in relation to the extent of the bottom indicates, and it has possibly been an oblong or oval dish, such as that found at Mondsie, and illustrated in *Archæologia*, lvi. pt. ii. p. 267, in Professor Gowland's article on "The Early Metallurgy of Copper, Tin, etc., in Europe." Like the last, it shows on the bottom the effect of great heat. Another fragment is a portion of a smaller vessel of the same sort, which has been only $1\frac{7}{16}$ inches in height. It is



Fig. 20. Portion of Bowl-shaped Vessel ($\frac{1}{2}$).

also of soft pink clay, and shows the same peculiarity of construction. Was the reason of this to prevent the breaking to which such a vessel would be liable on the application of great heat, if formed solid in the usual manner, owing to the thick body not expanding uniformly? Made in two layers, the expansion could take place more evenly throughout.

Fig. 20 shows a portion of a thick bowl-shaped vessel of a depth of $2\frac{1}{2}$ inches, and an estimated interior diameter of $3\frac{3}{4}$ inches. It is roughly fashioned with a rounded bottom curving regularly into the sides. Like the previous vessels, it has been subjected to heat externally, and appears to have been fashioned in the same peculiar manner.

There seems to be some doubt as to the purpose for which such vessels as these were used, but Professor Gowland¹ throws out the suggestion that they were employed in a rude refining process, by which part of the impurities in the crude copper obtained by smelting were removed through allowing the air to act on the surface of the metal; or as the vessels in which the founder made his alloy.

Probably connected directly with the metallurgical operations were two stone rubbers or mullers, one a pebble of coarse granite, the other a fractured piece of millstone grit, both showing a surface flattened by attrition. Such stones would be used for reducing copper or tin ore to a coarse powder preparatory to smelting it.



Fig. 21. Section of Rims of Domestic Pottery (†).

It is somewhat remarkable that, with the exception of one fragment of a rotary quern, no trace of querns of either type was brought to light, nor of any mortar or knocking trough.

Here and there, from various levels, pieces of domestic pottery were obtained, all of the same class, buff-coloured ware, unglazed, and much resembling the cooking pots of later mediæval times. The bottoms are flat and unthumbed at the edge. Very similar is the pottery from Dunadd. Fig. 21 shows the sections of the rims.

One other object of pottery (fig. 22), which does not fall into any of the foregoing categories, was found to the front of the stone foundation. It is rather more than the half of a flat-bottomed hemispherical vessel with an aperture on the top, $1\frac{1}{2}$ inches across, a height of $1\frac{1}{8}$ inches, and

¹ *Op. cit.*

diameter across the bottom externally of $3\frac{1}{8}$ inches. This object has probably been a lamp.

There is no piece among the foregoing examples of pottery which one would incline to refer to an earlier horizon than that of the pottery moulds, the most readily dateable of the objects found; but in addition to those already described, two pieces of undoubted Roman character were unearthed, one a chip of Samian ware, too small to afford any indication of the kind of bowl to which it had belonged, and the other a piece of a mortarium. The former came from near the surface, and



Fig. 22. Pottery Lamp (3).

may easily have been brought to that level by rabbits; the latter lay at the bottom of the forced earth.

Two pieces of stone with small trough-like hollows in them are possibly portions of moulds for casting ingots in, such as may be seen in the Museum, obtained from Dunadd, the Broch of Harray in Orkney, and other early occupied sites.

None of the iron objects are of particular interest.

Three whorls (fig. 15, Nos 7, 8, and 9) were found, two of lead, of which one has a slightly scalloped edge, and the third of stone. This last is distinctively decorated with two deeply moulded concentric circles surrounding the perforation.

The only jet object recovered was the hemispherical head of a pin

(fig. 15, No. 11). It is imperfect, having been cut away with a sharp tool on one side.

In addition to the bone pin already mentioned, only two other relics of bone were found, a pin-head (fig. 23) and a thin spatula-like object (fig. 15, No. 10), which has one surface worn perfectly smooth and polished with rubbing. The pin-head is spherical, rather flattened on the side into which the pin has been inserted, and has been ornamented with three small bosses of bronze on the sides, and with a small triangular plate of the same metal on the top. When it first came to light it was seemingly perfect and of a beautiful green colour, owing to staining by the bronze, but though efforts were used



Fig. 23. Pin-head of Bone with Bronze Mountings.

to effect its preservation, it has split badly and completely lost its fresh appearance. This pin-head does not bear an analogy to any pins in the Museum, nor, as far as I am aware, to any recorded in our *Proceedings*, but it has a certain resemblance to a type of pin-head belonging to the bronze age in France,¹ illustrated by M. Déchelette. That pin, however, is of bronze, and is pierced where the bosses occur in the bone one. The spherical form with the projecting bosses suggests a likeness to the glass beads ornamented with small protuberances and belonging to late Celtic times.

A number of pieces of bronze were found chiefly in front of the stone foundation, but these appear to be chiefly the waste from castings. There is a small rivet showing a peculiar tongue projecting from one side on the upper surface of the plate to which it is fastened; a small portion of the rim of a vessel, and one or two folded strips of metal.

¹ *Manuel d'Archéologie Préhistorique* (Déchelette), ii. p. 324, fig. 127, 5.

These, then, are the facts of the excavation. What deductions may be drawn from them? In the first place, it seems to me incontestible from the evidence already given that the vitrification of the wall of the fort was a structural process, and the fact that, wherever the rampart remained, the wall was to be found intact within it, shows how the process of vitrification served its purpose, acting as a solidifying cement. But, it may be asked, what was the necessity for this wall? A glance at the section K—L will show that it occurs a short distance in front of a downward slope of the natural surface, and that it acts as a buttress to withstand the thrust of the rampart directed from the higher level on which it was partially situated; further, the front of the rampart is carried very near to the edge of the steep slope of the hillside, and the wall was no doubt intended to prevent it breaking away from the edge of the declivity. The theory of the accidental fusion of sand or stone by beacon-fires seems quite untenable in this case, as it is inconceivable that the vitrification should have been confined to one narrow band along the periphery, and should not have occurred elsewhere in the thickness of the rampart; moreover, as indicating that the heat has not altogether been produced from the top, which such a theory implies, it will be observed in fig. 9, which shows an uncovered portion of the wall, that a number of large waterworn boulders form a coping firmly embedded in vitrified matter, but themselves unaffected by heat on their upper surfaces. Lastly, the vitrified wall is most in evidence where it was most required, on the weakest side of the enceinte, which likewise happens to be the side almost entirely screened by a semicircle of heights in the immediate vicinity, and therefore an improbable site for watch-fires. In a brochure on certain vitrified forts in France,¹ by Mons. F. Barthélemy, there is shown a section of the wall of the Butte Ste. Geneviève, one of five forts with calcined walls, and situated in the valley of the Meurthe, in the territory of Essey-les-Nancy. Occupying almost the same relative position

¹ *Camps Vitrifiés et Camps Calcifiés*, Nancy, 1892.

as the vitrified wall in the rampart of the Mote of Mark, and likewise at the base of a slope, is a mass of lime (*chaux*) mixed with charcoal and logs, incompletely carbonised, which M. Barthélemy considers to have been intentionally produced there, to serve an exactly similar purpose as I claim for the wall in this case. The fact of the wall being enclosed within a rampart of earth and stones, a more stable covering than a dry-stone wall, has no doubt in this case effected its preservation as well as its concealment, and for the same reason it may yet be found that other forts whose vitrified character has been disregarded on account of the small amount of vitrification visible on the surface may prove on excavation to be of the same class. In the Stewartry of Kirkcudbright, Castle Gower, near Castle Douglas, Trusty's Hillock at Anwoth, and the Mote of Edgarton, may possibly be such forts, for vitrified stone has been found on all of them, but in small quantities.

To what period does the erection of the rampart with the vitrified wall belong? We have among the relics evidence of occupation of the fort at two distinct periods, separated at least by some 500 years; the earlier vouched for by only two small pieces of Roman pottery which we may attribute to a date in the first 400 years of our era, for there is nothing distinctive about the style of either piece beyond its Roman character, and the later period amply indicated by the other relics, the general horizon of which is the ninth century or at latest the tenth. As already explained, I do not think the flints can be held to be evidence of a prehistoric occupation, as very few indeed show secondary working, and the general facies of them is not that of flakes from the site of a manufactory of flint objects. They are gathered chips, many of which have been used as strike-lights. There is not a piece of pottery, unless it be the half of the cup or bowl (fig. 20), which can conceivably be contemporaneous with the Roman wares, and the texture and quality of the material of which that object is composed approximates more nearly in that respect to that of the thick crucible (fig. 19) than to any recognised ware of Roman times. The

absence of querns, hammer-stones, and other relics of an early iron age occupation, indicates a very brief use of the site at the earlier period.

There has undoubtedly been around the fort at one period a massive wall of dry-stone masonry, the evidence of which is patent in the debris which strewed the flanks. There was no sign that a wall had ever stood on the top of the rampart, in fact, the body of the rampart behind the vitrified wall was remarkably loose and open, not in the condition which a superimposed wall of great extent would have left it in. In the short space, however, between the front of the rampart and the sharp edge of the hill before section K—L, several large boulders were met with firmly embedded in clay, and possibly these were the foundations of a wall. The presence of animal bones in the actual rampart at several places and at its base, suggests the idea that it was thrown up with material from a previously occupied site, and hypothetically I would suggest that when the later occupiers of the hill took possession of it, they found all around the summit a massive stone wall, which during some five or six centuries of neglect, or possibly from wilful demolition, was in an extreme state of ruin, and as the fashion of their day favoured another class of fortification, and one more easily effected than the restoration of the wall, they cleared off what remained of it, built and vitrified the retaining wall, and threw their rampart over it. At the extreme western end, where I have suggested that there may have been an entrance, it is noteworthy that the base of a wall remains, and that over it there is no trace of vitrification or rampart. The other explanation, which is one that does not greatly commend itself, is that the massive wall was erected in front of the rampart. This would have placed it dangerously near the edge on the north side, while in other places there would be actually no room for it, so near has the rampart approached the declivity. On the whole, therefore, though all is not quite clear, I incline to consider that the rampart with its vitrified core is secondary and contemporaneous with an eighth- or ninth-century occupation.

The hollow in the centre of the south side was covered with very black earth, bones in great quantities, and a considerable quantity of stones, indicating, I believe, that there had been stone buildings on the summit, of which the clay floor and the stone platform to the north of it were the foundations. Though a careful note was made of the important relics as they came to light, and though the soil was removed and handled in layers, no definite stratification was observable, or distinctive character in the objects recovered from the various levels. Moulds were found within a foot of the surface, and at a depth of 2 feet 9 inches, and while pieces of the moulds for carding combs came from the higher level, a comb which might have been cast in one of them lay trampled into the floor at the lowest. It seems probable that a great heap of debris, a kitchen-midden, had accumulated, during the occupation, to one side of the inhabited area, and that after the occupation ceased, and the buildings, etc., were demolished, that got thrown down into the hollow and spread over the surface. Proof, however, of the contemporaneous nature of the majority of the relics came from another source. On the south face, opposite the west end of the hollow, and at an elevation 14 feet below that of the crest of the rampart, a shelf of rock was apparent, and on sinking a hole on the top, as was expected, a talus was discovered. It was not of great dimensions, and at deepest, where the deposit ceased against the natural slope, it had a depth of only 2 feet. The deposit, which was particularly black, seemed to be almost pure carbon, but had none of the crystalline appearance of charcoal. The amount of bone it contained was almost negligible, but, except bronze, almost every class of relic was represented—pottery moulds, crucibles of all three sorts, wheel-made domestic pots, flints, glass, and iron.

At a slightly higher level along the slope, some 20 feet to the eastward, the grass on the surface, though there had been a prolonged drought, looked remarkably fresh and green, a fact which suggested another talus at this spot also, and as it was opposite the south end of

the west front of the clay floor, expectations were considerable. They were, however, doomed to disappointment, for under the surface lay a deposit of huge stones, intermingled with numerous bones; beneath this debris, which contained no relics whatever, lay a thin dark-coloured stratum, from which a few fragments of pottery moulds and of crucibles were recovered. So steep, however, was the natural gradient, that besides entailing very great labour, the removal of this mass of loose stones would have been a very dangerous operation.

On the opposite or north side of the hill a number of circular depressions in the mass of loose stones were observed which might well have been hut circles, situated not far below the edge of the summit. On one of these exploration was started, but after removing loose boulders to a depth of some 4 feet without finding any signs of building around the hollow, or any relics, the natural bottom was reached, and it seemed probable that these hollows had been made by treasure-hunters in comparatively recent times.

It would be pleasant to speculate on the nature of the occupation of this site. Who were these Celtic craftsmen making brooches, crosses, pins, carding combs, etc., in this secure retreat, at a time when the Viking, in his long black galley, was infesting the creeks and estuaries of Western Scotland? One might expect such art to be conducted under the shadow of some monastic establishment, but here there was no trace of any oriented building. The number and variety of the moulds seem to imply rather a founding factory, established here for the purposes of trade, than the existence of a small establishment manufacturing its own articles of use and adornment, though, on the other hand, the pieces of choice glass certainly seem to imply the presence of some one of wealth and importance. When we have learned more of the art of this obscure period we may be able to ascertain from the ornamentation on the moulds themselves what the varying depths at which they were found failed to reveal, different dates of production which will show the duration of the industry. My impression, failing

that source of knowledge, is that the period of production was during the ninth century, and that there was an occupation which continued subsequent to its cessation, during which the wooden post was driven into the sandbed, and the planks and beams utilised between the sand and the clay floor on the south side of the hollow. For defence the site is admirable, and for working in bronze or iron advantageous, for copper is to be found in the neighbourhood, and has been worked near Douglas Hall; iron, if not found sufficiently rich near Dalbeattie, where it occurs in the form of hæmatite, could be imported to the base of the hill from the south side of the Solway, where the glare of furnaces may be observed on any clear night from the mote itself; and, similarly, proximity to the estuary facilitated the importation of tin.

In conclusion, I would express my indebtedness to the Governors of the Hutton Trust, Dumfries, the proprietors of the hill, for the permission which they gave me; also to Mr Dinnel, the farmer, for countenancing the excavation; and as the Governors have presented all these interesting relics to the National Collection, I may take this opportunity of pointing out likewise the Society's obligation to them.

III.

THE ORIENTATION OF SCOTTISH CHURCHES, ILLUSTRATED BY
AN ANALYSIS OF SOME EXAMPLES IN ABERDEENSHIRE AND
BANFFSHIRE. By F. C. EELES, F.R.Hist.S., F.S.A. Scot.

The orientation of ancient churches is a feature so constant and so familiar that it appears to have escaped investigation in Scotland. A certain amount of attention has been given to it further south, but with no very definite result, except to emphasise the almost universal adoption of the practice. With notable exceptions, chiefly in Italy, all Christians observed it down to the Reformation period. Since that time, especially in recent days, the more extreme Protestants on the one hand, and Roman Catholics on the other, have set it aside, while Anglican and Oriental Christians have continued to maintain it.

Orientation includes the congregation, or at least the officiating clergy, facing east during prayer, the building of churches and the placing of altars so as to accord with this principle, and the burial of the dead with the feet towards the east. The principle appears to belong to natural religion, and not to be peculiar to Christianity. It would seem, however, that the Jews prayed facing west, both in the Temple and in the synagogues. Maimonides, tracing this to Abraham praying upon Mount Moriah, considers that it was done in opposition to Gentile practice.¹ Tertullian, c. A.D. 205, tells us that the heathen suspected the Christians of being sun-worshippers, "because they were well known to turn to the east in prayer." St Clement of Alexandria says of pagan temples: "The most ancient temples looked towards the west (*i.e.* had their entrance towards the west), that those who stood with their face towards the image might be taught to turn towards the east."² There is good evidence of Christians having

¹ *On Prayer*, xi. 1, 2. Cf. orientation in sun-worship referred to in Ezekiel viii. 16.

² *Strom.* vii. 7, § 43.

faced eastward in prayer from very early days. When the world-wide religion of Christianity took the place of the local and national Judaism, the general instinct of turning to the place of sunrise seems to have been accepted without question. Religion is the breaking forth of light in darkness, the sunrise upon human life. Even the Jewish prophets had looked for a deliverer that should come forth like the sun, as Malachi said: "Unto you that fear my name shall the sun of righteousness arise with healing in his wings."¹ St Clement of Alexandria writes: "The east is the image of the day of birth. For as the light which there first shone out of darkness waxes brighter, so, like the sun, the day of the knowledge of truth has dawned on those immersed in darkness."² The earliest Christians believed in the immediate return of our Lord Jesus Christ to reign in glory. In the 1st Epistle to the Thessalonians, written probably in A.D. 65, St Paul bears witness to this, when, in reference to the Second Advent, he says: "We which are alive and remain unto the coming of the Lord" (1 Thess. iv. 15). It was believed that our Lord would come with the clouds of heaven and appear in the east, as the morning star, the sun of righteousness, the light of the world, the dayspring from on high.

Later, when Christians had left off expecting the immediate return of the Master, they still testified to their belief in his second coming, in whatever way and in whatever time, by turning to the east.³ Had not he himself likened his coming to lightning in the east, saying: "As the lightning cometh out of the east, and shineth even unto the west; so shall also the coming of the Son of man be" (St Matt. xxiv. 27). Here we have a definite mention of the east in connection with the Second Advent, albeit only in a simile.

This is the line of thought followed by St John Damascene⁴ and by Cassiodorus,⁵ who say that as Christ faced west when on the cross, we

¹ Mal. iv. 2.

² Strom. vii. 7, § 43.

³ St Hilary, on Ps. 67.

⁴ *De orthodoxa fide*, iv. 13, a chapter "concerning worshipping to the east."

⁵ *Ad Ps.* 67.

face east in prayer; that as he appeared in the east and then ascended into heaven, so he will reappear in the east, like the lightning in the text quoted above.

St Cyril of Jerusalem¹ and others explain that the catechumen at baptism turned from the west, the place of darkness, to the east, the place of light and the site of Paradise, which is reopened to him by that sacrament.

Some early writers explain that in praying towards the east the soul is seeking its old home in Paradise, to which it hopes to be restored in Christ.²

St Augustine is an early witness to the prevalence of turning eastwards in prayer in Western Christendom.

In later times, when the mediæval arrangement of the large choirs had developed and most members of them faced north and south ordinarily during services, the rubrics prescribed that those in such positions should turn eastwards, or rather towards the altar, at certain parts of the service, *e.g.* the *Gloria Patri* after the psalms.

But whatever be the explanation of its adoption, the antiquity and the universality of the practice remain. As regards the actual church building, the Apostolic Constitutions direct as follows: "And first let the house be oblong, turned towards the east." The same document also directs the congregation to "rise up with one consent, and looking to the east, pray to God eastwards."³ The rule is borne witness to by Socrates the historian, when he says of the church at Antioch that "it had its position inverted; for its altar looks not towards the east, but towards the west."⁴

The most striking of the earlier exceptions occur in Italy, especially

¹ Catech., xix. 9; St Jerome, *In Amos*, vi. 14; St Ambrose, *De iniat.*, 2; Lactantius, ii. 10; Pseudo-Justin, *Quest. ad Orthodox.*, 118.

² St Basil, *De Spiritu Sancto*, c. 27; Apostolic Constitutions, ii. § vii. cap. 57; St Greg. Nyss., *Homil. V. de Oratione Dominica*; St John Chrysostom, *ad Daniellem*, vi. 10; Gregentius, *Disputat. cum Herb. Jud.*, p. 217.

³ *ii.*, § vii., cap. 57. So also the Didascalia (Funk, i. 158 ff.) and Edessene Canons, i.

⁴ *Hist. Eccl.*, v. 22.

in Rome, though St Paulinus speaks of orientation as "morem usitatiorem" as contrasted with the basilica of St Felix at Nola. In Rome there were pagan basilicas adapted for Christian worship; churches had to be built by the sides of streets or at right angles to them; and in certain cases the situation of the building was determined by the desire to place the altar immediately over a martyr's grave. Nearly every point of the compass is represented in Rome, but in Ravenna and in places subject to Byzantine influence orientation is the rule.¹

But it must be noted that where the altar was at the west end the principle of orientation was maintained in another way, viz. by the celebrant and his ministers standing behind the altar and facing east, even when the congregation perforce faced west.² Thus the apparent exceptions are very much diminished in number. In later times the practice of the sacred ministers facing the congregation across the altar went very much out of use, though it is not obsolete even at the present day. Hence many of the apparent exceptions to orientation became true exceptions in course of time, so that later on the principle of orientation became practically a dead letter in Rome. This probably furnishes the reason why, with the spread of Roman liturgical customs on the Continent after the Council of Trent, neglect of orientation spread over the churches of the Roman obedience.

All over the rest of Christendom, whether East or West, North or South, orientation was the rule, and nowhere more than in these islands. The Celtic Church seems to have been specially rigid in this matter. Churches were built east and west, the altar being at the east end, the clergy and people in chancel and nave in front of it. This was also the case with side chapels, and the lesser altars which multiplied so greatly in the large town churches in the later Middle Ages.

¹ An analysis of orientations in Rome is given in *Sketches of Continental Ecclesiology, or Church Notes in Belgium, Germany, and Italy*, by Benjamin Webb, London, 1848, pp. 480-486. See also *Christian Art and Archaeology*, by Walter Lowrie, New York, 1901, pp. 176-178.

² See Goar, *Euchologion sive Rituale Græcorum*, Paris, 1647, p. 29.

In churches of the Roman obedience at the present day, the lesser altars are placed against the end walls of transepts, the side walls of the nave, or even at the west ends of aisles, without regard to orientation; but in pre-Reformation times such altars were almost invariably orientated.¹ When there were more of them than could be set against the east ends of aisles, against the east walls of transepts, or on either side of the door through the rood screen between the nave and the chancel, they were placed in side chapels enclosed by screens and built against the screens on the eastern sides of such chapels. Thus, the aisles of a church like St Giles', Edinburgh, or St Nicholas', Aberdeen, were divided into chapels by transverse screens at intervals. And in the small transeptal chapels so numerous in Scotland, the altar stood against the east wall and not beneath the window at the end.

The Reformation had but little effect on the orientation of churches and churchyards. In England it had absolutely none, and there the old principles have been strictly carried out down to the present day. Only in the case of certain town sites where orientation becomes practically impossible has it been set on one side. This occasionally happened in mediæval times, as in the case of the Greyfriars' Church at Aberdeen, which the requirements of the site seem to have caused to be placed north-west and south-east, the altar being at the latter end. In Scotland, even during the seventeenth century, churches continued to be built with their long axes east and west, and burials were invariably east and west. It was only when new churches began to be built on new sites during the latter part of the eighteenth century that the

¹ There may have been two exceptions at King's College Chapel, Aberdeen, where it is possible that the altar of the Venerable Sacrament stood against the north wall of the choir, east of the stalls, and the altar of St Katharine against the south wall. This position is assumed for these altars by Dr Norman Macpherson in his interesting and careful account of the Chapel, *Notes on the Chapel, Groen and other Ancient Buildings of King's College, Aberdeen*, Aberdeen, 1890. But it may be that these altars were against the west sides of small screens at right angles to the north and south walls.

old custom can be said to have died out, and then only gradually. When the change took place in internal arrangement it is difficult to say. Certainly, by the end of the eighteenth century, nearly every parish church had the pulpit in the middle of the south side, and the seats grouped round it. Some of the smaller churches had the pulpit at the east end, and it is probable that it was during the seventeenth century that the change in seating gradually came to be made. It would be interesting to know how far this was due to the influence of the English "sectaries" in the middle of the seventeenth century. Of course the communion tables had been placed lengthwise down the middle of each church most likely since the Reformation, though an instance is said to have survived in a Shetland parish church until the nineteenth century, where the table was at the east end.

In ancient times the belfry was nearly always at the west end, and this was the position it continued to occupy in the great majority of rebuilt churches till after the first quarter of the nineteenth century.

In the Scottish Episcopal Church orientation was impossible under the Penal Laws in the eighteenth century, but the growth of liturgical studies among Scottish Episcopalians during the same period resulted in the gradual revival of the practice after the repeal of the Penal Laws in 1792.

Orientation in burial has been strictly observed in the case of nearly all Christians. Even when that somewhat strange practice arose in the Frankish dominions in the eighth and ninth centuries of "translating" the bodies of saints and placing them in richly decorated shrines in the apses of churches, immediately behind the high altar, orientation was strictly adhered to. The shrine was set up east and west, with its west end and not its side immediately behind the altar.

An idea is widely prevalent that the clergy used to be buried the reverse way from lay folk, that is to say, with the feet to the west instead of to the east. This is not the case. No single example of this custom of earlier date than the sixteenth century has yet been

produced. No instance of such a practice has ever been forthcoming in the East. The notion that it existed of old has its origin in the practice of the Roman Church during the last three centuries, which has been to bury bishops and priests, but not deacons, with their feet to the west. John Burchard of Strasburg, who was Master of Ceremonies to Alexander VI. in the days when the pagan renaissance was at its height, tells us in his diary how he introduced the custom in imitation of that of the pagans of old. For some reason or other it was only adopted in the case of certain of the clergy, viz. priests and bishops. It does not appear in any official Roman service book until the reformed *Rituale Romanum* of 1614, and the custom is said not to be universal in churches of the Roman obedience even now.¹ There appear to be a handful of cases in which this practice has been adopted in the English Church, in the American Episcopal Church, and also by Scottish Episcopalians, under the mistaken belief that it is ancient; and I know of a case in England where a fifteenth-century brass of a clergyman of the parish was raised from where it had lain for four hundred years and replaced in the opposite position, from the same want of knowledge.

In Scotland, orientation in burial has been preserved right down to the present day. It is only within the last few years that one finds it neglected in the newer cemeteries and in many (but by no means all) recent additions to parish churchyards.

So far we have only spoken of orientation in general. When we come to analyse the orientation of particular churches, we find that there is considerable variation. While we can truthfully say that orientation was the rule, and that it was intended in each case, we

¹ There is no trace of it in the very full Instructions of St Charles Borromeo, issued by the third Provincial Council of Milan in 1573, nor yet in the well-known *Ceremoniale Parisense* of 1703, in which Cardinal De Noailles, Archbishop of Paris, gathered up all the ceremonial uses of that metropolitan church. Its first appearance in any service book seems to be in the abortive edition of the *Rituale Romanum* of 1588, said to have been published by Cardinal Sanctorius and afterwards suppressed.

find that it varies from east-north-east to east-south-east; and we ask why, and what, if anything more than mere chance, determined the particular inclination in each case. This is a matter about which there has been a good deal of theorising in England. Some, for example, have sought to prove that churches were orientated according to the sunrise on the festival of the patron saint. This has been vehemently denied, and with good reason. It is not the writer's intention to advance any theory—at present, at all events—but merely to give the exact orientation of a group of churches, and to point out a few facts which emerge from a study of them.

In the plans of the early island churches drawn by the late Mr T. S. Muir¹ and the late Sir Henry Dryden,² arrows are given to show the points of the compass. These are hardly likely to be placed with such minute accuracy that it would be safe to attempt to calculate the exact degree of orientation from them, but they afford a rough guide to the amount of inclination north or south. An analysis of them gives the following result:—

DUE EAST.

Kilmory, Duirinish	M 269 ³
St Columba, Balivanich, Benbecula	D 88
Lybster, Caithness	M 108
Egilshay, Orkney	M 115

NORTH OF EAST.

St Olave, Kirkwall, <i>slightly</i>	D 110
St Carraig, Eilean Mor	M 201
Wyre, Orkney	D 114

¹ *Ecclesiological Notes on some of the Islands of Scotland*, Edin., 1885.

² *The Ecclesiastical Architecture of Scotland*, Macgibbon and Ross, Edin., 1896, vol. i.

³ In this table, M = Muir's *Ecclesiological Notes*, D = Sir H. Dryden's plans in vol. i. of Macgibbon and Ross's *Ecclesiastical Architecture*. The numbers refer to the pages in these books.

Brough of Deerness	D 103
St Tredwell, Papa Westray	D 106
Ness, North Yell	D 152
Inch Kenneth, Mull, <i>North-East</i>	D 166
Teampull Rona, Rona, <i>nearly North-East</i>	M 92
Cullingsburgh, <i>more than North-East</i>	M 134

SOUTH OF EAST.

Cruggleton, Wigtownshire	M 238
St Ninian, Sanda	M 267
„ „ Whithorn	M 232
Teampull Sula Sgeir, <i>slightly</i>	M 97
Linton, Shapinshay, <i>slightly</i>	D 122
Brough of Pirsay	D 136
Teampull Eorrapidh, Lewis	M 43
Teampull Beannachadh, Lewis, <i>nearly South-East</i>	M 43
Teampull-na-Triannaide, North Uist, <i>nearly South-East</i>	M 48, 277

In the Isle of Uyea, off Unst, in Shetland, is a remarkable case of an early church with the chancel at the west end of the nave and a doorway in the east wall. The actual position of the axis of the church is west-south-west and east-north-east. The case forms a noteworthy exception.

The groups of small chapels at Howmore, South Uist, and at Kilbar, Barra (D 70, 72), vary among themselves, the former group all inclining to the north, though in different degrees, the latter both to north and south.

Here the variants north and south are about equally divided, and each group is more than double those that are due east. The examples are too few and too widespread to admit of any deductions being made from them; but we may notice that they include undoubted Celtic

churches at both extremes and also due east, and churches probably of Scandinavian foundation of similar inclination.

We turn now to the Aberdeenshire and Banffshire lists, from which we get little if any more light, in spite of the greater number of churches and the more limited area. The results of the examination of the orientation of over sixty of them are given below. They have not been chosen for any special reason, but are fully representative of all parts of that district. In the list, the name of the patron saint where known, the county, and the diocese have been added in each case.

In Scotland it is much more difficult to obtain orientations accurately than in England, as so many of the ancient churches have been destroyed or rebuilt, and by no means always on the old foundations. In some cases, of course, we have the whole or part of the mediæval church. These have been indicated by an asterisk (*). In others the existing remains are of indeterminate date (in the case of certain grass-grown foundations) or of the seventeenth century. In these cases, which probably represent the position of the mediæval church, an obelus (†) has been used. Where the church has been rebuilt at a later time, the only guides are the oldest stones and the walls of burial enclosures. As may easily be imagined, these are by no means infallible, though they often give a good general idea. In many and many an old churchyard the more ancient grave-stones are placed with surprising regularity, while in others they have evidently been disturbed to such an extent that nothing can be safely deduced from their position. In cases where a definite group of old stones has been followed, the letter "s" is prefixed to the orientation, and where the orientation is only approximate, the letter "c." In other cases it may be taken for granted that the present church, most of the stones, including the oldest, with perhaps a burial enclosure, all have the same orientation. In a few cases, *e.g.* Philorth, Braemar, Fyvie, Meldrum, there was nothing sufficiently definite to justify inclusion in the list. In each case the figures are, of course, approximate.

When we come to analyse the list, we are struck by the fact that out of sixty-two churches and sites only eight can be said to be due east. Of the remaining five which are not due east, the vast majority incline to the north, viz. thirty-eight, as against sixteen which incline to the south. Only three incline as far as 20° to the south, whereas fifteen incline 20° or more to the north. The extreme inclination southwards is 20° ; the extreme to the north is as much as 35° . It is noteworthy that, out of nine which are almost exactly 20° north, five are mediæval churches, viz. Gamrie, Fordyce, Mortlach, Auchindoir, and Kincardine O'Neil, and all churches of importance. Magnetic north is now about 20° west of true north, and it might therefore be suggested at first sight that in these cases the compass may have determined the orientation. But it could not be suggested that the older churches were all 20° north of east, as the two most extreme cases on the list, Aberdour 35° north, and King Edward 20° south, are both mediæval churches. It must also be noted that the choir of Elgin Cathedral is only 5° north of east, and that the nave is nearly due east, while the great mediæval parish church of St Nicholas, Aberdeen, is due east.

But this does not take into account the periodic variation of the magnetic pole. It changes its position from $24^{\circ} 27'$ maximum variation west to $24^{\circ} 30'$ maximum variation east over a cycle of 320 years. Thus, in A.D. 1817 the maximum variation east was reached, while in 1497 the magnetic pole was at the other extreme, magnetic north and true north coinciding in 1657. Again, in A.D. 1017 magnetic north and true north would have been the same; in 1177 there would have been the greatest variation east. Presuming that the compass was known and used by 1497, we might expect to find churches of about that period inclining very much to the north of east; if the compass were known and used in the thirteenth century, which is hardly possible in the West, churches of that date would incline a good deal to the south. But this theory is not supported by the

facts, even if we could believe that the compass was known and used here so long ago.

If we examine the churches on the list to see if their orientations tell in favour of the theory of determination by sunrise on the festival of the patron saint, we find that all the evidence is strongly opposed to any such conclusion. Thus, to take a few cases where several churches are dedicated to the same saint :—

St Andrew, 30th November.		St Moluoc, 25th June.	
Alford . . .	25° N. of E.	Mortlach . . .	20° N. of E.
Tyrie . . .	25° N. of E.		
Gartly . . .	20° N. of E.	Rhynie . . .	5° to 15° N. of E.
Monymusk . .	10° N. of E.	Clatt . . .	<5° N. of E.
Rayne . . .	E.	Tarland . . .	5° S. of E.
Logie Buchan .	20° S. of E.		

St Drostan, 4th December.	
Aberdour . . .	35° N. of E.
Insch . . .	10° S. of E.

Then we note that, whereas the festivals of SS. Andrew, Drostan, Nathalan, Kentigern, Devenick, and Bridget all fall in winter, there are churches with these dedications which are orientated east or north of east, and in some cases very far north of east. While it is not possible to prove a negative in all cases, of course, we may safely say that we find nothing here to warrant the holding of the saint's day sunrise theory.

The character of the dedication tells us nothing, for we have Celtic saints as well as those of universal veneration at both extremes and also in the middle. Now, does the date of the actual buildings supply any clue to the mystery of varied orientation? Mortlach, Monymusk,

and Birnie are early churches; the first two are 20° and 10° north, and the third 5° south of east. Auchindoir and Deskford are of the sixteenth century; the former is inclined 20° north, and the latter 10° south of east. And the locality does not help us. King Edward (20° south) and Gamrie (20° north) are adjacent parishes; so are Insch (10° south) and Leslie (10° north).

It may be objected that no result has been reached by this collecting and analysing of a group of orientations of churches. But is it certain that there will never be any light thrown on the question when a great many more are tabulated? Perhaps. At any rate no result can possibly be obtained unless the data be accessible. A beginning must be made. It is by no means certain that there would be no result if we had the necessary information for the whole of Scotland.

LIST OF CHURCHES WITH DEDICATION AND ORIENTATION.

ABBREVIATIONS.

A Aberdeenshire.	a Diocese of Aberdeen.
B Banffshire.	m " Moray.
M Morayshire.	* Medieval building, in whole or part.
AB Formerly in Aberdeenshire, now in Banffshire.	† Probably on medieval foundations.
BA Formerly in Banffshire, now in Aberdeenshire.	c. circa.
	s Older stones.

Church.	Local-ity.	Dedication.	Orientation.	Remarks.
Aberdour .	A a	St Drostan	* 35° N. of E.	Some old stones 25° N.
Botriphnie .	B m	St Fumac	† 30 ..	Old fragment and old stones.
Boharm .	B m	(17th century)	30 ..	Older stones very regular. Also burial enclosures.
Premnay .	A a	St Caman	s 30 ..	
Cluny .	A a	St Constantine ? ?	s 30 ..	
Alford .	A a	St Andrew	s 25 ..	
Tyrie .	A a	St Andrew	c 25 ..	

LIST OF CHURCHES WITH DEDICATION AND ORIENTATION—*continued*.

Church.	Local-ity.	Dedication.	Orientation.	Remarks.
Glenmuick .	A a	St Mary	20° N. of E.	Some stones about 25° N.
Gamrie .	B a	St John	* 20 "	
Fordyce .	B a	St Talarican	* 20 "	Older stones very regular.
Mortlach .	B a	St Moluoc	* 20 "	
Gartly .	BA m	St Andrew	± 20 "	
Kennethmont	A a	St Regulus	† 20 "	
Auchindoir ¹	A a	St Mary	* 20 "	Chapel in detached part of St Fergus Parish.
Glenbuchat	A a	St Peter	20 "	
Kincairdine				
O'Neil	A a	St Earchard	* 20 "	
Aboyne .	A a	St Adamnan	† c. 17 "	
Fetterangus .	BA a	St Fergus ?	† c. 15-20 "	
Rathen .	A a	St Ethernan	* 15 "	
Essil .	M m	St Peter	± c. 15 "	
Rothlensay .	B m	St Drostan	± 10 "	
Forgue .	A a	St Margaret of Scotland	± c. 10 "	
Culsalmond .	A a	St Mary ? ?	10 "	Present ch., 1786, due E.
Leslie .	A a	St Ninian	10 "	
Tullich .	A a	St Nathalan	* 10 "	
Kildrummy ²	A a	St Bridget	* < 10 "	
Alvah .	B a	St Colman †	< 10 "	
Monymusk .	A a	St Andrew	* 10 "	
Rhynie .	A m	St Moluoc	± 5-15 "	
Cabrach .	AB a	St Mary	5-10 "	
Birse .	A a	St Michael	10 "	
Spynie .	M m	Holy Trinity	5-10 "	Nave nearly due E.
Elgin .	M m	Holy Trinity	* c. 5 "	
Banff .	B a	St Mary	* 5 "	Older stones 5°-15° N.
Slains .	A a	St Ternan	† 5 "	
Towie .	A a		? 5 "	
Clatt .	A a	St Moluoc	* < 5 "	
Rathven .	B a	St Peter	† < 5 "	
Glengairn	A a	St Kentigern	† E.	

¹ A group of stones in S.E. corner of churchyard about 60° N. of E.² Kildrummy Church is situated upon a hillock, and the churchyard is roughly oval in shape: some of the graves in the S.E. part are deflected to the S., and a few are almost due N. and S.

LIST OF CHURCHES WITH DEDICATION AND ORIENTATION—*continued.*

Church.	Local-ity.	Dedication.	Orientation.	Remarks.
Aberdeen .	A a	St Nicholas	* E.	
Rayne .	A a	St Andrew	† "	Freefield aisle 1754 (?) 5° N. of E.
Cruden .	A a	St Olave	"	Some old stones slightly N. of E.
Methlick .	A a	St Devenick	"	
New Deer ¹ .	A a	(17th century)	"	A late burial en- closure 5° S. of E.
Monquhitter ² .	A a	(17th century)	"	But most older stones 20° N. of E.
Kearn .	A a	?	"	Older stones and burial enclosure.
Tarves .	A a	St Englacins	† < 5° S. of E.	
Birnie .	M m	St Brendan	* 5 "	
Tarland .	A a	St Moluoc	5 "	
			(or less)	
Oyne .	A a	St Adamnan	* 5° S. of E.	
Coldstone .	A a	St John ? ?	5 "	
Dunbennan .	A m	St Bean ? ?	5-10 "	Some stones 20° S. of E.
Grange .	B m	St Mary	s c. 7 "	
Insch .	A a	St Drostan	† 10 "	
Deskford .	B a	St John	* 10 "	
Marnoch .	B m	St Marnan	s 10 "	
Ellon .	A a	St Mary	† 10 "	
Strichen .	A a	(17th century)	c. 10 "	
Keig .	A a	St Diaconanus	† 10 "	
Ordiquhill ³ .	B a	St Mary	* 20 "	
Logie Buchan .	A a	St Andrew	20 "	
King Edward .	A a	St Peter	* 20 "	

¹ Erected out of a chapelry in 1662.² " " " " 1649.³ Seventeenth-century burial enclosure and present church due E. A chapelry of old.

IV.

NOTES ON EXCAVATIONS AT DUNDARGUE CASTLE, ABERDEEN-SHIRE, AND ON A STONE CIRCLE AND GRAVE AT NEW DEER, ABERDEENSHIRE. BY REV. W. BEVERIDGE, F.S.A. Scot.

The ruined Castle of Dundargue stands on the shore between Rosehearty and New Aberdour. Jutting out from the mainland is a narrow promontory of rock, in height 70 feet from the sea-level, and in length about 260 feet. The rock is red sandstone, and from the appearance of it the Celtic tribes of the district gave the place its name. Dundargue means "the red fortified place." On this narrow promontory of rock there had been built a fortification, the ruins of which remain to-day. At what time the fortifications were built or when the rock was first used as a habitation it is quite impossible to say. Approximate dates may be assigned to parts of the ruins, but as to the period of the first foundations history and research remain silent. The only fact we know, to start with, is that the place was a fortress early in the fourteenth century. It may be presumed, however, that it was fortified long before that date, and, as we shall see, there are indications pointing to an early Celtic inhabitation. On the whole, history is extraordinarily silent about Dundargue. Indeed, all that is really known historically might be put into comparatively few sentences, and probably there is little more to be gleaned than what we find in Pratt's *Buchan* (4th edition, 1901), to which reference may be made.

The appearance of the place, as described before 1911, may be briefly referred to. The authorities are mainly Cordiner's *Antiquities* (1780), the *Old Statistical Account*, *Collections* in the Spalding Club, and Pratt's *Buchan*. The writers in these volumes draw attention, first of all, to the ruins of the Castle on the narrow tongue of rock. At its broadest this tongue of rock is not more than 60 feet. The writers

draw attention to the foundations of buildings on the rock, and to a crumbling boundary wall. They describe, at the south point of the rock and next the land, what Cordiner calls "a strong arched gateway." A considerable part of this gateway still remains, and it appears that a portion of it was destroyed by lightning in 1873. South of this gateway, where probably there had been a portcullis, is a narrow neck of rock, at its widest about 12 feet. On the landward side, and south of this narrow neck, are what the *Old Statistical Account* calls "the outworks." These outworks stretch landward about 120 feet, until they end in a gateway. Apparently there had been a gateway on the inner side of "the outworks" as well as on the outer. The *Statistical Account* further says that there is "a fine level green where the outworks have been." Excavation has shown that this "fine level green" has its own story to tell. Beyond "the outworks," so called, there is a triple rampart. All the old descriptive writers refer to this triple rampart and triple ditch. The first rampart is partly earthwork (10 feet thick) and partly wall (5 feet thick). Beyond this rampart is the first ditch or moat, 20 feet wide, and, at the point where a drawbridge had been, 12 feet deep. Landward are two more ramparts and dry ditches. Certainly, on the landward side, "the outworks," so called, had been well guarded. The Castle on the tongue of rock was practically impregnable, and in the days before siege guns nothing but starvation could have reduced it. It might be added to this description that the triple rampart takes a crescent form.

These and other features revealed by the excavation are shown on the plan here given (fig. 1). The figures on the plan indicate the places where the following objects referred to in the subsequent description were found:—(1) two coins with lion rampant; (2) deer-horn, 3 feet deep; (3) jawbone of killer whale, 6 feet deep; (4) pair of smith's tongs, 3 feet deep; (5) large coins, 4 feet deep; (6) a hairpin; (7) a finger ring (fig. 2); (8) a bracelet (fig. 2); (9) a horse-shoe; (10) a coin; (11) melted lead, a goat's head, and a sheep's head; (12) an

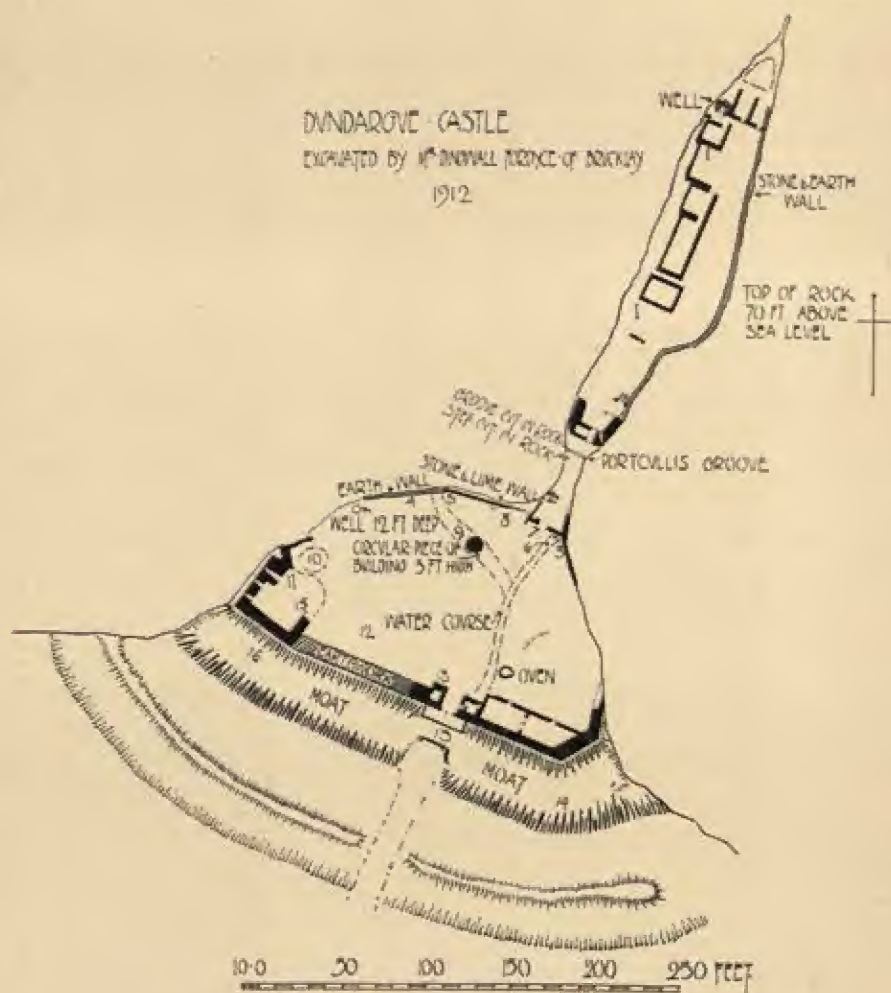


Fig. 1. Plan of Dundargue Castle.

Inverness halfpenny token; (13) a small horse-shoe; (14) a piece of leather; (15) a piece of thick rope; (16) an arrowhead of steel; (17) portion of a head of a spear or battle-axe; (18) a bullock horn.

Up to 1911 little more was known of Dundargue or its ruins. In the end of that year excavations were begun by the proprietor, Mr Dingwall Fordyce, of Brucklay, who has shown an example that might be more frequently imitated by the fortunate owners of ancient habitations. During the winter of 1911-12, and the spring of 1912, the excavations were most carefully carried out. The foundations on the tongue of rock were laid bare. The "outworks" were excavated, and the first moat beyond the first gateway was carefully cleared out. The results of the excavations have proved of considerable archaeological interest, and have well rewarded the enlightened policy of excavation.

On the Castle rock, which was probably the inner sanctuary of Dundargue, the spade revealed little, apart from laying bare the general structure of the buildings. Some coins, however, were found which, though not rare, have proved interesting. Two of them, with I.R. on the obverse side, belong to the reign of James VI., and were issued in 1589. They are not copper, but billon, an alloy of copper and silver. A third coin is so defaced that it is impossible accurately to determine its date, but it is probably a silver penny of the reign of Edward I., and struck in the London Mint.

A deer's horn was found 3 feet deep on the neck of earth and rock between the Castle rock and "the outworks." The largest number of finds, however, were in the enclosure between the north and south gateways of "the outworks." There have apparently been various buildings in these outworks, some of them probably for cattle or horses. One interesting building near the north end seems to have been a sort of round tower. In these buildings and in the enclosure were found such suggestive articles as a button, a hairpin, a bracelet, a finger ring (fig. 2), a horse-shoe, and a smith's tongs, in addition to

a good deal of broken pottery, and bits of coal or lignite. Bones of goats, sheep, and other animals were also found. The most interesting of such finds was one about which zoologists were not at first quite certain. At the north end of the outer enclosure, beside the gateway leading on to the narrow neck, was found beneath 6 feet of black mould and gravel a curious jaw-bone. It has been identified by Sir William Turner, of Edinburgh University, as belonging to the killer whale (*Orca gladiator*). It is difficult to conceive how such a bone should have been deposited in such a situation, and should have been found resting under so much mould and gravel. In the same outer enclosure was found a copper coin from Inverness. It is a trade token, one of the many varieties issued towards the end of the eighteenth century to supply a deficiency in the copper coinage. Such tokens were issued not by the mint but by corporations or by private traders, and were accepted as legal tender till 1817. The Inverness coin is dated 1793. Some large pieces like coins or medals were also found, but they are so much worn and decayed that it has been found impossible to identify them. On one of them, however, there is distinctly the word "India." For assistance in identifying the coins I am indebted to the Rev. R. M'Kinlay, New Pitsligo.

In the moat or ditch outside the first rampart were found a small horse-shoe, a bullock horn, a metal leaf, and a steel arrow-head (fig. 2).

From an archæological point of view, probably the most interesting find was within the outworks enclosure. Below the foundation stones of the round tower already referred to (diameter, 8 feet), the spade uncovered "a kitchen-midden," in which were found, along with characteristic black mould, layers of shells such as periwinkle (*Littorina littorea*). The shells broke with a touch. Upon this "kitchen-midden" the foundations of the tower had been built, plainly proving that the "midden" was of greater age. The presence of this "kitchen-midden" must be regarded as a fact of archæological significance. In conjunction with this fact must be placed the finding of many stone

balls, stone whorls, a hammer stone, and an excellent flint borer—all within the same enclosure.

Such facts point to the probability of an early Celtic fortification,



Fig. 2. Objects found at Dundargue Castle.

which, indeed, the name Dundargue itself indicates ; and it is probable that long before the buildings now in ruin had been erected there had been a native fortification. Probably, also, the three-crescent ramparts which now surround the enclosure are older than the time from

which the stone buildings date, and they may, indeed, date from the age when the Celtic inhabitants threw them up as a protection. A section made through these ramparts might reveal additional stone implements of an early date. In the meantime, and so far as excavation has proceeded, the remains found point to such a Celtic foundation as is suggested. Not for the first time in the history of our country have stone buildings followed on the site of a primitive fortification.

Thanks to Mr Dingwall Fordyce, I am enabled to exhibit to the Society the relics recovered from the excavations.

For the following notes on the pottery found during the course of the excavation I am indebted to Mr Alexander O. Curle, F.S.A. Scot., the Director of the National Museum of Antiquities :—

NOTE ON THE FRAGMENTS OF POTTERY FROM THE EXCAVATION.

The fragments of pottery submitted consist of the remains of some fourteen or fifteen vessels. There are portions of five handles, also four handles that are practically complete. One handle, which is still attached to the neck of a large green glazed jar, is fluted on the upper surface, and has broad leaf-shaped depressions on the sides at the point of contact with the neck. Similar leaf-shaped markings are apparent on all the other fragments of handles, which tends to show that these vessels have all been of contemporaneous manufacture. The handle joins the neck very near the edge of the rim.

There are fragments of the bottoms of one or two jars of large diameter which show a marked convexity, and, to steady the vessel, the clay has been drawn down between finger and thumb at the edge so as to form a series of supports. The depressions thus produced are unusually deep, and the supports correspondingly serviceable; the markings appear to occur in groups of two or three at intervals around the base.

There are decorated fragments of three large glazed pots. One, of which there are a number of pieces, has been decorated with two bands of wavy incised lines between alternating ridges of dog-tooth ornament. Another vessel, of which a small portion only remains, shows rows of small vertical incisions crossing the ridges produced in the manufacture of the pot. A third piece shows the trace of a zig-zag incised ornament, and a raised fillet, marked at close intervals with vertical incisions.

The characteristic features of all this pottery indicate that it belongs to the fourteenth century, and, from the similarity of the various details, it was probably all made about the same time. One single piece of highly glazed black ware seems to belong to a much later period.

A STONE CIRCLE AND GRAVE AT NEW DEER, ABERDEENSHIRE.

On the farm of Standingstones, in the parish of New Deer, there stood about eighty years ago a remarkable stone circle. The stones of it were removed and broken up for building purposes, and the spot where the circle stood is now under cultivation. The position of the circle was on the southern slope of the Hill of Culsh. Adjoining fields on the slopes of the same hill have yielded at various times remarkable finds, such as cists, urn-cemeteries, stone implements, etc. Apparently, the slopes of the hill were the burying-ground of the inhabitants of the district in the bronze-age period. An account of some of these finds, and notably of a small urn now in the Museum, will be found in the *Proceedings* of the Society (vol. xxxv. p. 258). The writer has meantime in his possession several articles, including a jet bead and a small flint axe, found at the same time.

Graves and stone cists are still being uncovered in the same area. Last year, the writer and Mr Littlejohn, farmer, Standingstones, uncovered a grave of an oval shape, the walls of which were built of rough undressed stones. Some bones were found in the grave, and

in the walls of the grave was found a stone, 12 inches long, 4 inches thick, and at its broadest 11 inches wide, on one side of which was a large cup-mark. The cup was 4 inches in diameter and $\frac{3}{4}$ inch in depth. Similar stones with cup-marks have been found in graves. One at Rayne is described in the *Proceedings* (vol. xli. p. 126). In this case the grave was built of rounded stones, and two small boulders were found, each with a cup-mark on the top. In a grave discovered at Fyvie, and described in the *Transactions of the Banffshire Field Club* (1887-88, p. 37), one of the top slabs had a cup-mark on it, and "in the building of the end of the grave was found a stone" with a ring-mark incised on it.

The site of the stone circle at Culsh has always been remarkable for the number of small white quartzite stones lying on the surface. These stones are scattered over an area 30 feet in diameter. It occurred to the present writer that an excavation of the site might give some interesting results. With the help of Mr Littlejohn and his sons, the excavation was carried out when the field was ploughed last year. On the area there were found several flints and a stone axe which had been partly broken through the process of agriculture. Throughout the area were also found masses of burnt soil. On carefully digging over the area four pits were found, two of these being 3 feet in diameter and 4 feet in depth. The other two pits were smaller. Two of the pits were filled with rough stones. At the bottom of these were found bones, greatly decayed. No stone implement was found in the pits, unless one much-decayed stone, like a rough axe, could be described as such.

The results of the excavation show that the site had been used for interments, and that in the burial rites fire had been used.

MONDAY, 9th February 1914.

PROFESSOR G. BALDWIN BROWN, M.A., in the Chair.

A Ballot having been taken,

Mr W. KIRKNESS, Fernlea, Kirkwall,

was duly elected a corresponding Member, and

Mr W. BALFOUR STEWART, Fir Grove, Birkenhead,

was duly elected a Fellow of the Society.

The following Donations to the Museum and Library were exhibited, and thanks voted to the Donors.

(1) By the Rev. W. F. BELL, United Free Church Manse, Tulliallan.

Epitome Adagiorum ex Novissima D. Erasmi Rot. Recognitione, etc., MDXLIX. In the original binding, and bearing the signature of Hugh Mackail, Covenanting Martyr, hanged at the Market Cross of Edinburgh, 22nd September 1666.

(2) By the Governors of the Hutton Trust, Dumfries, through A. O. CURLE, F.S.A. Scot., *Director of the Museum*.

A large selection of Pottery Moulds and other relics found in the Mote of Mark, Parish of Colvend, Stewartry of Kirkcudbright (see the preceding communication by Mr A. O. Curle).

(3) By GILBERT GOUDIE, F.S.A. Scot., the Author.

David Laing, LL.D. : A Memoir of his Life and Literary Work. Svo. Edinburgh, 1913.

(4) By the MASTER OF THE ROLLS.

Calendar of State Papers, Colonial Series, America and West Indies, December 1st, 1702-1703. 8vo. London, 1913.

(5) By GEORGE F. BLACK, Ph.D. (Gypsy Lore Society), the Author.

A Gypsy Bibliography. 8vo. Edinburgh, 1914.

The following Communications were read :—

I.

NOTICES OF A SHORT CIST DISCOVERED IN THE PARISH OF YESTER, EAST LOTHIAN; OF A PREHISTORIC BURIAL AT ALVA, CLACKMANNANSHIRE; AND OF AN EARTH-HOUSE IN SKYE. By J. GRAHAM CALLANDER, F.S.A. Scot., *Secretary*.

A SHORT CIST AT YESTER.

About the end of March of last year (1913) a short cist containing the remains of a human skeleton was discovered in the Pishwanton Wood, in the Parish of Yester, East Lothian, through one of the cover stones breaking under the weight of a traction engine which was passing over it. The exact site is on the rough cart track through the wood about 200 yards north of its junction with the Long Yester and Long Newton road, on the crest of a ridge running almost due north and south.

To Mr A. D. Macdonald, factor on the estates of the Marquis of Tweeddale, I am indebted for bringing the discovery to my notice, and for furnishing me with a description of the grave when it was first exposed. We visited the site on the evening of the 13th May and removed the skeletal remains, which unfortunately had been much

damaged after the opening of the grave, the skull being broken into small fragments.

The cist was formed of four slabs set on edge, being rather broader at the north than at the south, while the ends were parallel. It measured 2 feet 9 inches in length, 2 feet across the northern end, 1 foot 6 inches across the southern end, and 1 foot 5 inches in depth. The side slabs were about 5 inches thick, and the end slabs at the north and south 10 inches and 4 inches respectively. The slab on the west side wanted the lower corner at the southern end, and the vacancy thus caused was filled with a smaller stone inserted about 5 inches back from the inner line of the slab. Two cover stones, which just appeared above the surface of the ground, were placed lengthwise across the mouth of the cist. The stone at the northern end was 2 feet 2 inches by 1 foot 7 inches by 8 inches, and the other 2 feet by 1 foot 10 inches by 10 inches, the latter having a piece of one end broken off. This last slab was of white gannister, and the others of red grit.

There was no soil in the grave when it was first opened, and the bones of the skeleton were seen lying on the gravel at the bottom of the chamber, the skull being nearly complete. A small quantity of charred wood was noted amongst the soil. No relics bearing signs of human workmanship were found, but amongst the bones was a split nodule of clay ironstone, $3\frac{3}{8}$ inches in length by $2\frac{3}{4}$ inches in breadth by $\frac{1}{2}$ inch in thickness, with a natural cavity on one side, $1\frac{1}{8}$ inches long, by $1\frac{3}{8}$ inches across the wider end, and $\frac{1}{8}$ inch deep, shaped like a flat bronze axe, and simulating a flat axe mould. Its presence in the cist may have been purely fortuitous, but there is a possibility that the peculiar shape of the cavity on the stone may have attracted the attention of a people familiar with the flat bronze axe, who had considered it of sufficient value to make it worthy of being deposited in the grave.

The bones were submitted to Professor Thomas H. Bryce, Glasgow University, who reports as follows :—

"Bones from Gifford Cist."

"The skeleton from this cist is in a very much broken and imperfect state. The skull is represented only by the base, the occipital region and part of the vault on the left side, and one half of the mandible. The bones of the brain-case were broken into many fragments, but it has been found possible to restore the greater part of the base and the one side of the vault. No measurements are obtainable, but the form of the restored fragment is such that it may be stated with some confidence that the skull belongs to the brachycephalic type, although the index cannot have been much above 80. The mandible is that of a person of middle life. Three teeth—an upper molar, a lower premolar, and a canine—have been preserved. The crowns show none of the wear, the result of gritty food, so frequently observed in prehistoric teeth. The long bones are so much broken that no exact data regarding stature can be given, but the probability is that it was about 5 feet 5 inches to 5 feet 6 inches. The femora are represented only by their proximal ends; they are stout, heavy bones, and in all probability belonged to a muscular male. There is marked flattening below the trochanters, and a sharp lateral flange; the platymeric index is 71 in the case of the right, and 73 in that of the left bone. The fact that the epiphyses are all fully united indicates that the person was of full adult age; the slight degree of wear of the crowns of the teeth shows that probably he was not far advanced in life."

A PREHISTORIC BURIAL AT ALVA, CLACKMANNANSHIRE.

On the 24th December last, while quarrying stone for road metal in a quarry at the foot of the Ochils, at Alva, James Murdoch uncovered the remains of a human skeleton which had been buried in a natural cavity in the rock. Two days later he was killed at the same spot by the fall of a mass of overhanging rock, a tragic sequel, which not long ago would have been considered a judgment on him for

disturbing the dead. The police authorities were immediately informed of the discovery of the skeletal remains, and P.C. George Donald, who fortunately had some knowledge of prehistoric burials, removed the bones and examined the grave, the remains being handed over to Dr W. L. Cunningham, Alva. These two accompanied me to the site on the 13th January following, and to them I am indebted for particulars of the discovery.

The quarry in which the grave was found is situated at the mouth of Alva Glen, a few yards distant from the right bank of the burn which flows through it. The body had been placed in a cavity or rock shelter in the face of the cliff, about 40 feet from the base, and about 200 feet above sea-level, and a rough, curved wall of dry-stone building, about 1 foot in thickness, had been built across the opening, which faced the east, the ends of the wall being still *in situ* when I visited the site. The space enclosed measured about 4 feet 6 inches from north to south, and about 5 feet from east to west. Subsequent to the burial the whole face of the rock and the walling had been covered, to a thickness of probably some 6 feet, by soil and detritus washed down from the hill face above. The greater part of the floor of the cavity was formed of clean, broken, angular stones, but the space on which the body was placed had been covered with a thin layer of soil preparatory to the burial. No charcoal or charred wood, which is so often seen in prehistoric graves, was found in this deposit. The skull lay in the north end of the grave, on its right side, facing the rock to the west, the vertebrae and ribs followed a line to the south, and the nether limbs were inclined towards the interior of the cavity. The whole face, including all the teeth and the lower jaw, was wanting. Apparently the body had been placed in a flexed position, half on its side and half on its back. Nothing else was found in the grave but a quantity of snail shells, probably twenty or thirty, which were nearly all broken, the few complete examples being in a very fragile condition. Elsewhere it has been stated that these formed a necklace, but while they

were strewn out in front of the skeleton for a distance of over 3 feet, none of them showed any signs of artificial perforation. The species of *Helix* is probably *hortensis*, the common garden snail.

Professor Bryce states that the skeleton is that of a dwarf of about 4 feet 2 inches in stature. The epiphyses are all fully united, although the line of union is visible on the surface at some points. Growth must therefore have been completed, and the person must have been, if the union of the epiphyses of the long bones had pursued its normal course, over twenty-one years of age. If, however, as there is some reason for believing, the epiphyses had united prematurely, the condition of the long bones gives no indication of the age of the individual. The first piece of the os sacrum is only partially united with the second; and were this taken as a sign of incomplete consolidation of the skeleton, it would be necessary to conclude that the age was under twenty-five. On the other hand, certain characters point to the conclusion that we have here to do with a variation of the os sacrum—in which, although the first bears part of the articular surface for the hip-bone, only four, not five vertebræ, have fused. The sutures of the skull are all open save the temporal part of the coronal. In dolichocephalic skulls this portion of the fronto-parietal suture is the first to show signs of closure between the twentieth and thirtieth years of life; and this fact, taken along with the characters of the mastoid process of the temporal bone, permits the age to be placed in all probability under thirty.

Skull.—The whole face is absent, and the right half of the base and the lower portion of the right lateral wall are broken away. The calvaria shows the general characters of a female skull, but it cannot be stated definitely that the individual was a woman, because the cranial characters are such as might have been present in a dwarf of the male sex. The calvaria is of moderate size, and is well formed. The horizontal circumference measures about 525 mm. The sagittal arc extends to 382 mm., made up of 130 mm. for the frontal, 135 mm.

for the parietal, and 117 mm. for the occipital arc. The maximum length is 185 mm., the maximum breadth 135 mm., the basi-bregmatic height 130 mm. The breadth thus bears a ratio of 73·5 to the length, and the skull falls well into the dolichocephalic class. The height index is 70·2.

The limb bones are remarkably short and slight, but are well formed, and the muscular impressions are in general well marked.

The humerus measures about 240 mm., the left radius 172 mm.—figures which are much below the average. The distal end of the radius is curved forwards and towards the ulna to a greater degree than usual. The right femur measures only 347 mm. It has a remarkable degree of torsion in its upper third, so that the axis of the neck forms an angle of as much as 32° with the axis of the distal extremity. The angle in modern bones is usually about 12°. The left femur is broken at its proximal end. The stature calculated from the femur, according to Pearson's formula (*Phil. Trans.*, A. 192, p. 100), lies between 49·8 and 50·8 inches. There is distinct antero-posterior flattening below the trochanters, and the platymetric index is 78·3.

Both tibiae are broken, the proximal end of one and the distal end of the other being preserved, so that it is not possible to calculate the length of this bone. The proximal extremity is slightly retroverted, and there is a distinct degree of lateral flattening in the proximal third of the shaft; the platycnemic index is 72. The distal extremity of the tibia shows on its anterior border a distinct facet for articulation with the neck of the talus. The talus is very remarkable for the sharp angle at which the neck is set to the body of the bone. The angle approximates to that which characterises the bone at birth, so that the bone resembles much more closely an infantile than an adult talus. There is, further, a distinct facet for the anterior border of the tibia on the upper surface of the neck in front of the trochlea tali. The presence of this facet and the sharp medial incurving of the medial border of the trochlea indicate that a more acute degree of flexion at

the ankle, associated with greater degree of inversion of the foot, was possible or habitual than in an adult of the present day. In short, the inverted and acutely flexed position of the foot seen in a child at birth had been to a considerable degree retained in this dwarf. The greater forward inclination of the neck of the femur may also be looked upon as a persistence of an infantile condition; and this fact, associated with the outward torsion of the upper part of the shaft of the thigh-bone, may indicate that the hip-joints were frequently or habitually placed in a position of acute flexion. The evidences of persistence of infantile characters afford some grounds for believing that the dwarfish stature was due to premature union of the epiphyses associated with an arrest of these adaptations of the lower extremities to the erect posture, which ordinarily take place in childhood. The separate condition of the first sacral vertebra may have a similar explanation. Unfortunately the lumbar vertebrae have not been preserved; otherwise it might have been possible to form conclusions regarding the character of the spinal curves. It should be noted that the bones show no evidence of the disease known as rickets.

The general conclusions to which a careful examination of the skeleton leads, is that we have here to do, not with a representative of a dwarfish race, but with an individual who from premature union of the epiphyses was to a remarkable degree stunted in growth. The condition is a well-known one, and the class of dwarfs, in which this individual must be included, is well recognised.

The skull is of the dolichocephalic type, and therefore differs from most of the skulls found in short cists associated with urns of the "beaker" type.

EARTH-HOUSE AT CAIRN-NA-BHODACHD, SKYE.

About eight miles north of Portree, and nearly a mile beyond the Old Man of Storr, impinging on the west side of the new road under construction between Portree and Staffin, is a rough ridge slanting

down in an easterly direction from the rocky mound known as the Cairn-na-Bhodachd (the old man's cairn), lying at the foot of the line of precipitous craigs which run north and south of the Storr Rock. To the east the land, covered with a fine growth of grass on the top of peat and clay, falls away in an undulating slope for a distance of about 400 yards, when it suddenly drops 550 feet or so to the seashore. The rocky face behind the rough mound is known as the Craig Cairn-na-Bhodachd, and the ridge on which the earth-house is situated bears the name of Sron Cairn-na-Bhodachd, "sron" meaning "nose." A section through the "sron" or sloping ridge shows several feet of tough blue clay lying in pockets on a bed of compressed shells, 2 feet thick, under which is red rotten rock.

About the 30th July last (1913), while workmen were digging into the ridge for gravel for the new road, they encountered a stone structure near the northern side of the ridge, which they took to be a drain, though why there should have been such a thing here is not quite obvious. This seems to have been the entrance passage into the earth-house, and, judging from information received from one of the men who assisted at its destruction, it must have been at least 30 feet in length. The whole of the stonework of this part of the structure had been removed, when a large lintel stone resting on well-built walls was noticed; at the same time the floor was seen to slant down with a drop of about 3 feet in a distance of 10 feet. Some animal bones were observed here, and a most disagreeable smell, probably imaginary, was felt, when the character of the structure was for the first time recognised.

Five days later Mr John Mackenzie, Road Surveyor, entered and examined the structure, and two days after Mr George M. Fraser, Solicitor, from the Portree office of Lord Macdonald's estates, penetrated to the inner end of the gallery, recovering a few bones and several small potsherds from the surface of the floor. Returning a week later accompanied by Mr J. J. Maclean, Procurator-Fiscal,

Portree, Mr Mackenzie, Dr Fletcher, and others, a careful examination of the house was made, and the covering of blue clay, which lay on the floor to a depth of several inches to within 9 feet of the inner end, was carefully sifted by hand, when other relics were recovered. A considerable quantity of charred wood was seen where the narrow entrance passage joined the main structure, and for 9 feet at the inner end of the house the floor was covered with red clay.

Notice of the discovery having been sent to the Ancient Monuments Commission, and the building being in danger of demolition, I proceeded to Portree to obtain a complete record of the structure, the workmen being warned to stop further excavation. When I arrived at the site, accompanied by Mr Fraser and Mr J. A. H. Mackenzie, Architect, Portree, it was found that the men had demolished about other 5 or 6 feet of the gallery, and had undermined it for a considerable distance, with the result that the mouth was closed on our arrival. We had it opened again, when a further fall immediately took place, closing up the chamber once more. This fallen material was removed, but it was followed by a creeping of the soil and the splitting of what was then the second lintel from the outside. The structure being in danger of utter collapse it was unsafe to enter, but I was able to make a number of measurements and get full details of the discovery first-hand.

The earth-house runs almost parallel to the road, from which it lies 59 feet to the west, Craig Cairn-na-Bhodachd rising about 200 yards behind it. It is built of dry-stone building; the stones are undressed, some of them being almost square and others elongated, the largest of them being rather over 12 inches across, with the majority much smaller. The lintel stones measure up to 4 feet 6 inches in length, and are about 18 inches in breadth, all being at least 6 inches thick, and some considerably more. The gallery, which runs almost due north and south, is nearly straight till near the inner end, where it curves slightly to the south-west. When measured by Mr Fraser on

the 7th August, before it had been disturbed, the main chamber measured 36 feet in length, giving with the entrance tunnel a total length of at least 70 feet. For the greater part the chamber measured from 5 feet 5 inches to 4 feet 4 inches or so in height, and about 3 feet 6 inches in width. About 15 feet from the inner end the wall on the west side had bulged in considerably, some of the stones being quite loose, and beyond that for about the last 9 feet it contracted to a width and height of about 2 feet, the end being blocked by a round stone with a flat stone above it. Whether the latter had fallen from the roof, or whether there was another entrance at this end, it is impossible to say without excavation. About 12 feet from this end there was a well-built recess or aumry in the eastern wall, about 15 inches from the floor level, measuring some 10 inches in height, 15 inches in width, and 12 inches in depth. Nothing but a few broken stones was found in this recess.

The trench which had been dug preparatory to building the house must have been of considerable depth. Where the entrance passage joined the chamber there were $3\frac{1}{2}$ feet of soil above the roof, and 10 feet further south there must have been about 6 feet of soil, making the depth of the original cutting at this part nearly 12 feet. So far as could be seen, this cut had been carried down to the rotten rock. Pieces of charred wood were noted in the soil, which had been packed in at the back of the building, no doubt the remains of the wood fires of the builders.

The relics found consist of a quantity of bones of the horse, ox, pig, and red-deer; a segment of a horn of the red-deer, $3\frac{1}{2}$ inches in length and $1\frac{1}{2}$ inches thick, cut across the ends; a number of limpet shells; a flat oval pebble slightly abraded at the ends, which may have been a hammer-stone; many fragments of coarse hand-made pottery with everted rims, and one piece showing some ornamentation in the form of a thin raised wavy line; and half of an iron hinge attached to a small piece of wood.

Many of the lintels were covered on the under side with a thin stalactitic limy deposit, mostly less than $\frac{1}{16}$ inch thick, while there were a number of small stalactites about an inch long and $\frac{1}{8}$ inch in diameter. On one of the lintels, about 15 feet from the end, Mr Fraser noted on his first visit, and later pointed out to the other gentlemen already mentioned, a small Latin cross about 2 inches in length, painted in red on the surface of the deposit. Beside it were other two markings of indeterminate character in the same colour.

There is a considerable quantity of potsherds from quite a number of vessels, but it has been found impossible to restore as much of any single pot as would give an idea of its dimensions. The vessels have all been hand-made, the walls varying from $\frac{3}{16}$ to $\frac{5}{8}$ inch in thickness. Some are hard and well-fired, and others show a softer and more friable ware, the former being usually dark in colour and the latter red or buff. Only one ornamented vessel is represented, and it seems to have been a bucket or barrel-shaped pot resembling one of the varieties of the Bronze Age cinerary urn. The decoration takes the form of a thin wavy line in slight relief encircling the vessel. Small portions of the lips of other five vessels are included, and these in one or two cases show a sharply recurved rim projecting about $\frac{3}{4}$ inch from the inside of the lip; the diameter of these vessels at the mouth seems to have been about 8 inches. One vessel of the harder quality, stone-coloured on the exterior, had the lip turned outwards in the slightest manner possible. The vessels with the everted rim seem to have been of globular shape with a flattened base, something like the Hebridean craggan, but differing from it in the quality and colour of the ware, and in the shape of the lip. The earth-house pottery bears a slight resemblance to some of the pottery from the brochs, preserved in the Museum, but the latter shows a rather better outer surface, a finer quality of clay, and a rim not so sharply recurved.

Professor Bryce reports that the animal bones recovered during excavation of this site include :—

1. The scapula, humerus, radius, and ulna, some carpal bones, the metacarpal or cannon-bone, the first phalanx and the terminal phalanx or coffin-bone of a small horse. All the bones are of the same side; but as the cannon-bone is defective and the second and third phalanges are broken, it is not possible to estimate accurately the length of the limb as a whole. The humerus is 26·6 cm., or 10·5 inches in length. The radius measures 32·2 cm., or 12·7 inches, and the first phalanx 7·8 cm., or 3·1 inches.

2. The skull, much broken, and the lower jaw of an ox. Owing to the fragmentary state of the bones and absence of horn cores, the variety of ox cannot be determined. There is also a portion of the axis vertebra and fragments of ribs, probably those of the ox.

3. Portion of the humerus of a pig.

4. Fragment of the cannon-bone of red-deer.

The shells are *Patella vulgata* or common limpet.

Among the bones is a long stalactite, presumably from the roof of the dwelling.

The curious feature of the collection is the occurrence of the nearly complete skeleton of the fore limb of a small horse, without any bones from other parts of the body. It does not follow that these bones are coeval with the occupation of the site. There is nothing, so far as the bones are concerned, to prove their antiquity. They might well belong to a pony such as reared in the islands at the present day.

The relics have been presented by the discoverers to the Hunterian Museum in Glasgow University.

II.

NOTE ON THREE SCULPTURED MONUMENTS RECENTLY DISCOVERED IN GARVOCK CHURCHYARD, KINCARDINESHIRE. By REV. D. G. BARRON, F.S.A. Scot.

The church of Garvock has already furnished one notable contribution to the ecclesiastical archaeology of Scotland in the mediæval censer, deposited in the National Museum by the Rev. William Stephen, minister of the parish, in 1887. This censer is figured and described in the Society's *Proceedings*, vol. xxi. p. 181.

In the course of improvements carried out last winter, the level of the churchyard was considerably lowered, with the result that no fewer than six buried tombstones were unearthed. Three of the number possess features of distinct antiquarian interest, and these it is our present purpose to describe.

I. In the notice of the parish, printed in the *New Statistical Account of Scotland*, it is stated that "the oldest gravestone is dated 1643, in memory of William Greig (a smith), 'ane famous honest man.' " Jervise, coming later, failed to identify this monument, and naturally concluded that it had been destroyed. It transpires, however, that it had merely disappeared beneath the turf, and its recovery, entirely unanticipated, gives interest to what is in itself an exceptionally good example of the richly-sculptured tombstone characteristic of the period from which it dates.

Of the usual recumbent type, it measures 6 feet 1 inch in length, is 2 feet $2\frac{1}{2}$ inches wide at the top, and 1 foot 11 inches across the lower end. The face of the stone presents a rounded surface, which is profusely carved in high relief. The reverse, which is roughly treated, is partially hollowed out, so that the maximum thickness does not exceed $2\frac{1}{2}$ inches, or at most 3 inches. Passing round the edge, and terminating in the top central panel, is the following inscription:—

HER · LYES · BENEATH · THIS · TOMBE · ANE · FAMOUS · HONEST ·
 MAN · VILLIAM · GREIG · SOME · TYME · HUSBAND · TO · ELSPIT ·
 PVRROVS · VHO · DEPERTED · IN · ANNO · 1643.

Beneath, a deeper panel carries in the centre a pair of pincers surmounted by a crown : to the right, a dagger and pistol—the latter curiously shaped and somewhat reminiscent of a modern revolver : to the left, a hammer, beneath which is an anvil, and, lower still, the letters W G and E H.

A later inscription, immediately below these symbols, overruns the space reserved for it, and impinges on what originally had been set apart to accommodate a skull and crossbones, the former encircled by the legend LECTOR · DISCE · MORI. The second inscription reads :—

HERE · LYES · WILLIAM · GREIG · YOVNGER · HUSBAND · TO · ELIZABETH ·
 HENDERSON · HE · DIED · THE · 12 · OF DECEMBER · HIS · AGE · 77 · YEARS ·
 ANNO · 1695.

II. The mutilated fragment of a mediæval stone which bore, incised, a Calvary cross and sword. It measures, roughly, 3 feet 8 inches in length, and has a maximum breadth of $13\frac{1}{2}$ inches. The top is wanting and, of what remains, the upper portion has been recut to form the sill of a window, which apparently was protected by a central iron stanchion, of which the broken socket may be seen. Below, a three-stepped Calvary is rudely sculptured, from which rises a slender shaft ; while, to the right, is part of a sword blade. The Calvary, awkwardly placed upon the stone, measures $11\frac{1}{4}$ inches across the base, and $4\frac{1}{2}$ inches in height. The shaft, $2\frac{1}{4}$ inches broad, is defaced at a height of 1 foot $5\frac{1}{2}$ inches, and here the sword blade also terminates with a length of 9 inches.

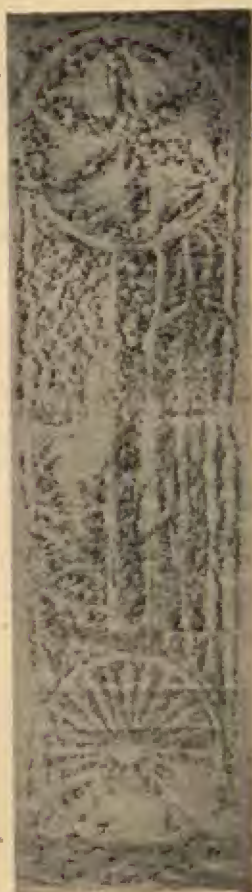
III. Of greater interest than either of the above is a much-worn slab 6 feet long by 1 foot 9 inches broad at the top, and narrowing to 1 foot $5\frac{3}{4}$ inches at the foot. Within an incised line which passes



Fig. 1. Slab dated 1643.



Fig. 2. Slab with Cross and Sword.

Fig. 3. Slab
of mediæval type.

Three Recumbent Slabs in Garvock Churchyard.

round the stone at a distance of 1 inch from the edge, and occupying the entire length of the area thus enclosed, is a double-headed cross, composed of two circles connected by a long and narrow shaft. A similar form of cross occurs on a grave slab at Convinth, Inverness-shire (*Proceedings*, vol. xlv. p. 311), but whereas it is there associated with a variety of other symbols, it carries with it, in the present instance, only a sword. In the *New Statistical Account* of the parish of Benholm, Kincardineshire, there is a notice of a stone, apparently similar, having been discovered in taking down the old church there.

The upper circle, 1 foot 6 inches in diameter, bears in relief six intersecting arcs. The lower circle, which is unfortunately damaged by a surface fracture, has a diameter of 1 foot $3\frac{1}{2}$ inches. In the centre is a circular depression, 2 inches across and $2\frac{1}{4}$ inches deep, from which a series of radial lines, twenty-four in number, stretch to the circumference. The shaft passes somewhat obliquely between the discs. It is 2 feet $9\frac{1}{2}$ inches long, and has an average breadth of 3 inches. The sword, disposed upon the right, is 33 inches in length, the blade itself measuring 29 inches. It has the usual depressed quillons. The rounded pommel rests on the circumference of the upper circle, while the point touches that of the lower.

III.

THE CHURCHES AND CHURCHYARD MEMORIALS OF ST HELENS ON
THE LEA AND COCKBURNSPATH. BY ALAN REID, F.S.A. SCOT.

ST HELENS, OR ALD-CAMUS.

To the romantic charm of the old Berwickshire folk rhyme—

St Abbs on the Knabs, and St Helens on the Lea,

But St Anns on Dunbar sands is nearest to the sea—

must be due much of the attention awarded the interesting and venerable sanctuary, standing noble in its decay, a couple of miles eastwards of Cockburnspath. Nearly all of our ecclesiological recorders have surveyed and described the ruined fane of Ald-Camus, Mr T. S. Muir (*Proceedings*, vol. iii. p. 296, with plan and views) and Messrs M'Gibbon and Ross most helpfully; but Chalmers, in his *Caledonia*, narrated the facts of its history so concisely and so well that all subsequent writers are compelled to found their observations on the statements contained in that remarkable book :—

"The parish of Cockburnspath, lying on the northern verge of Berwickshire, within the presbyterie of Dunbar, comprehends the ancient parishes of Ald-Camus, and of Colbrandspath. Ald-Camus derives its name from the Gaelic *ald*, and *camus* a creek or bay: And the village, in fact, stands on a streamlet, which, at no great distance below, falls into an *inlet* of the sea.¹ The Scottish Edgar granted to St Cuthbert's monks of Durham the manor of Ald-Camus, with the lands, woods, waters, tolls, shipwrecks, and other customary dues, which appertained to that manor, and Ald-Camus, thenceforth, belonged to the monastery of Coldingham, as a cell of Durham. The church of Ald-Camus was dedicated to St Helen, the mother of Constantine, whose festival was on the 18th of August: and its ruins are still called St Helen's-kirk.² We have seen, above, that Edgar granted the manor, but not

¹ The recent map makers have vulgarised this name into *Oldeamus*, supposing the prefix to be the Saxon *ald*, or old, and not the Gaelic *ald*, which is here, in fact, applied to a rivulet.

² The minister of the parish says: "From the nature of the building, and other circumstances, the church is supposed to have been erected in the eleventh century." *Stat. Acc.*, xiii. 231.

the church of Ald-Camus; whence, we may be led to doubt whether the church then existed. This was a *vicarage*, as we might suppose, from the circumstance of the church being the property of the monks of Coldingham. In the ancient *Taxatio* the vicarage of Ald-Camus is rated only at fifteen marks. On the 28th of August, 1296, Huwe [Hugh], the vicar of the church of Ald-Camus, swore fealty to Edward I., at Berwick. In 1446 some doubts were entertained whether the vicarage of Ald-Camus was absolutely annexed to the priory of Durham: now Eugene, the Pope, empowered the abbot of Melros to examine the point; and the abbot appears to have confirmed the union of the church of Ald-Camus to the priory of Coldingham. Ald-Camus parish was annexed to the adjoining district of Coldbrandspath in modern times. When Pont surveyed Berwickshire, during the reign of Charles I., Ald-Camus seems, at that period, to have been separate. Those two parishes were united, sometime before the year 1750, and the church of Ald-Camus, which stood near the sea-shore, was a ruin before the year 1770. The name of *Cockburn's-path* was anciently *Colbrand's-path*. The corruption of the old name began, however, as early as 1506. The original name was nothing more than the *path* of *Colbrand*, the name of some particular person. The church of Colbrand's-path does not appear in the ancient *Taxatio*, as it was, perhaps, then only a chapel; and it seems never to have been connected with any religious house. The patronage of the church appears to have remained with the lord of the manor till its union with Ald-Camus. The territory of Coldbrand's-path belonged of old to the Earls of Dunbar, where they had a castle in which they sometimes resided, etc."

Quite recently it became possible, through the kindness of the legal agents on the Dunglass estate, to make a close examination of the ruins and churchyard, and thus to submit some fresh testimony regarding both. Fig. 1 gives a fairly adequate representation of an exterior which, viewed from almost any standpoint, is singularly venerable, and, from several, extremely picturesque. But the "tooth of time," and the scour of the storm, have robbed the external walls of all that was distinctive; and it is to the interior that we turn for evidences of the original individuality of the fane. Digging here to a depth of 3 feet, the base mouldings of the chancel arch were exposed to view, and with these the data on which are founded the carefully measured drawing shown in fig. 2.

On this drawing, and on the remaining architectural features of the church, Mr John Watson kindly supplies the following notes:—

"The church of St Helens was founded in the twelfth century, the earliest remnants dating probably about 1150. These consist of a chancel 15 feet 6 inches long by 11 feet 7 inches wide, and a nave 30 feet 7 inches by 18 feet, which was reduced at a later period to a width of 17 feet $4\frac{1}{2}$ inches. In the chancel the four lower courses of the east side of the southern jamb of the chancel arch remain in good



Fig. 1. The Church of St Helens from the South-East.¹

condition, as seen in fig. 2, which also shows, by dotted lines, a restoration of the complete jamb. The chancel arch was narrow, measuring about 7 feet, and pointing to a survival of earlier dimensions. Mr T. S. Muir has described the ruins in his *Ancient Churches of Scotland*, but in his time the bases shown on the drawing were not visible.

¹ The interior north wall of the chancel appears to the right of the fig., a small window in the north wall of the nave showing through the chancel archway. The curvature of the added barrel vault is also to be seen to the left of the ruinous window in the south wall of the nave. Note also the "put-logs" in chancel wall and western gable.

Very probably the chancel was raised two steps above the nave, these steps originally being placed in the archway. Apparently the

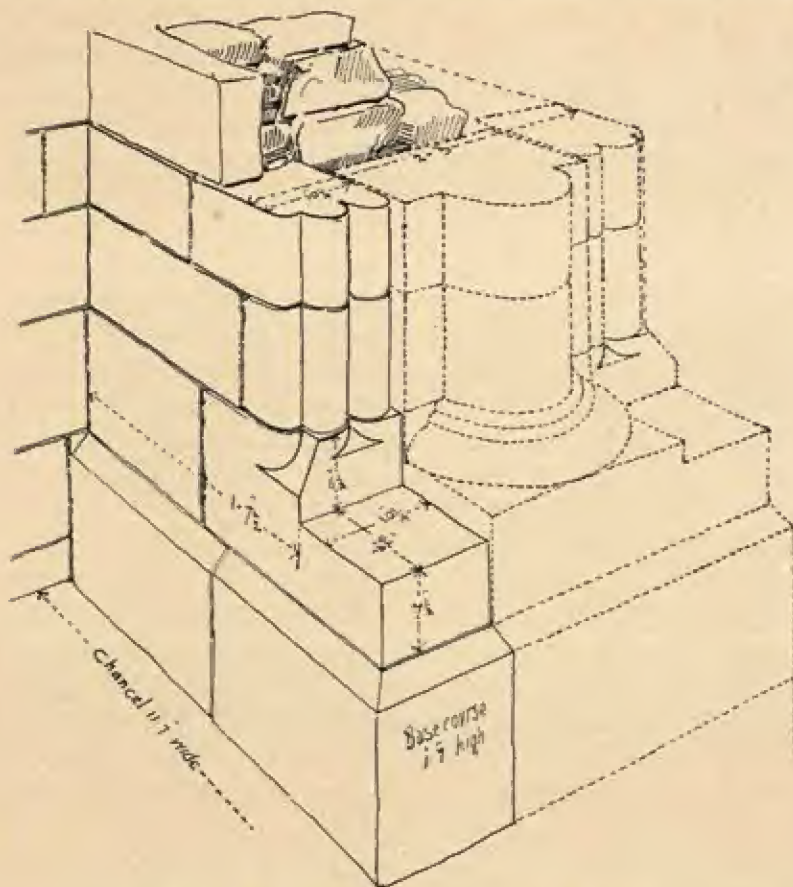


Fig. 2. Base Mouldings of Chancel Arch, St Helens.

whole church was covered by an open timber roof, which, at some later period—at all events, in the nave—was replaced by a stone

barrel vault. This is indicated by the thickening of the side walls, a thickening not incorporated into the older masonry, as is still clearly observable, and evidenced also by the actual remains of the arch itself. The west gable has angle buttresses, the character of which points to a fifteenth-century rebuilding of this portion of the structure. Its interior masonry shows a number of Norman arch voussoirs with chevron mouldings, which, with numerous 'put-log' openings, invest it with more than common interest."

The interior also shows the very worn remnants of an ornamental string course, which had run from the chancel arch to the walls of the nave, and may have surrounded the archway. A projecting stone in the left angle of the nave and chancel suggests the support of vaulting, but this must be regarded as evidence of the slightest that the arched roof of the nave was thus adorned. Considerable difficulty also attends the two arched recesses, formed in the south wall-thickening noted by Mr Watson, which are shown in fig. 3. It has been suggested that these recesses were intended as supports of the nave vaulting which rises over them, but this theory fails through the absence of any corresponding features in the opposing north wall. In all probability they were sepulchral or monumental in character, and one of them may have contained the sadly defaced warrior figure now lying among the tombstones outside of the church, and seen over the more remarkable monument depicted in fig. 5.

A little digging and probing of the burial-ground extending southwards of the church was rather disappointing in its results, but the relic shown in fig. 4 was worthy of far more than the labour expended in its recovery. This crudely-shaped and ornamented memorial was found in an erect position, but entirely buried, in a line due south of the intersection of nave and chancel, and was placed against the western interior wall of the nave, where it now remains. It measures 26 inches by 15 inches, narrowing to 10½ inches at the foot, and is about 5 inches in thickness. On its face, as shown in fig. 4, it bears

an incised cross, which has considerable resemblance to similar figures at Whithorn and St Blanes, as also to those at Bakewell, Derbyshire, figured in Cust's *Manual of Sepulchral Slabs and Crosses*,¹ and there assigned a twelfth-century date. The reverse side also bears a roughly



Fig. 3. The Arched Recesses, St Helens.²

incised cross, which, however, has the symbolic segments *closed*, a curious variant on the *open* segmentation drawn with more skill or care on the obverse. It is possible, also, to determine that this cross

¹ Parker, London, 1849.

² The south jamb of the chancel archway, at whose base the digging was done, appears to the extreme left of the fig., which also shows the later thickening of the walls for the support of the nave vaulting, also clearly indicated.

has been enclosed within a circle, distinct traces of which appear to the left of the slab, as seen in fig. 4. The smaller stone appearing to the left of both was also found among the tombs. It is a mere fragment of worked masonry, and may be regarded as a portion of a *benatura*, or of some other hollowed vessel of that type. It may here



Fig. 4. A Mediæval Cross-Slab at St Helens, obverse and reverse.

be suggested that these, and other relics of equal or greater rarity, are worthy of safer shelter than can possibly be afforded by lonely and roofless St Helens on the Lea.

The tombstones generally now lie heaped in confusion at the south side of the ancient walls, as shown in fig. 1. Three of these, at least, are of extreme importance among the relics of Scottish churchyards,

and some of them may safely be regarded as unique. Fig. 5, for instance, shows the southern aspect of a coped grave-cover, bearing ornamental features that carry us back to the period and style of which the Govan Collection is the chief exemplar, but presenting details of line, proportion, and symbolism that are strongly individual in



Fig. 5. Southern and Northern Splays of a Sculptured Coped Grave-Cover at St. Helens.

character. The striking pictorial design represents, in two different panels, a man on horseback, and an animal whose head is turned backwards and its tail curved over its back. The slab is much weathered, and is extremely worn towards its narrower and slightly mutilated end, but, even as it stands, the object is most uncommon in character, and Cust's *Manual* must again be consulted for reference to and records of its type.

The reverse or northern side of this interesting memorial is also shown in fig. 5. Greatly weathered, its ornamentation cannot be determined with precision. A panel-like depression is seen clearly in the illustration, but the entire splay is so worn, especially towards the top, that nothing definite remains. Unfortunately, the slab is broken at the foot or narrow end, by how much may be judged by the entire absence of the panel "return" seen so clearly 6 inches from the wider end. The length of the slab now is 4 feet 11 inches. It is 11 inches in thickness, tapers from 15 inches to 13 inches in breadth, and is splayed towards a ridge which is slightly rounded and tapers from 4 to 3 inches in breadth between the splays.

The churchyard also contains four tapering grave-covers, all of a very plain and quite unornamented character; and three others that are massive, but simply rectangular in form.

The portion of a hog-backed grave-cover, shown in fig. 6, adds another to the Society's records of this type of churchyard memorials. Here several lines of scale ornamentation are drawn within a slightly recessed panel, over which appears a curious band of greatly-worn sculptures, which are somewhat suggestive of animal forms akin to those depicted on a larger scale on the southern side of the relic. It measures 25 inches in length—about half of its original size, presumably; is 16 inches broad at the base, and 12 inches in depth, or thickness, at its centre. The massive proportions and pronounced curvature of the type are not prominent in the fragment, but the steep splays, the characteristic scallops, the sloping end, and the sharp ridge, declare its relationship to the fairly determinate class of memorials known as hog-back stones.

Most interesting but scarcely visible also is the sculpture on the southern splay. As in the case of the coped stone shown in fig. 5, the ornamentation here depicts a bestiary subject, and is slightly recessed within a panel which, like that containing the scale ornament on the opposing splay, shows a boldly projecting and rounded "return"

of over 3 inches in breadth. A single animal, drawn on a scale that fills the entire breadth of the panel, is here represented, but further than that the sculpture refuses to be explicit.

Even less can be hazarded regarding the remaining portion of still



Fig. 6. Portion of a Hog-backed Grave-Cover at St Helens,
obverse and reverse.

another and more worn relic of a contemporaneous character. This fragment is fully 3 feet in length, only 8 inches in thickness, and tapers from 16 inches to 14 inches in breadth. It has a strong suggestion of the hog-back type in its slight curve, steep angles, narrow ridge, and scale markings; but the designs on its principal splay are

so faint that it is impossible to determine either their subject or character.

Another grave-covering slab, and of an unusual type, is 58 inches in length, $6\frac{1}{2}$ inches in thickness, and tapers from 20 inches to 15 inches in breadth. Unlike the relief designs worked upon the older cope and hog-back monuments, the archaic outlines of the figure here depicted are incised; the whole work being so weathered or trodden, perhaps, that it is scarcely visible. Evidently, however, we have here the delineation of a warrior in the attitude of prayer. His sword has a straight guard, and it seems possible to recognise the texture of chain armour on part of the slightly rounded surface lying within the outlines of the arms and upper part of the body. The wide skirts of an outer garment spread round the feet of the figure, whose toes reach to within 8 inches of the bottom of the slab. Unfortunately, there is neither helmet, shield, name, nor date, whereby to identify this erstwhile knight of long-forgotten days.

It is evident that at some time or other all the tombstones at St Helens were removed from their original situations in the churchyard and dumped into a heap almost, along and near to the southern wall of the church. The reason for that regrettable procedure doubtless was that the large enclosure might be the more available for pasturage, for it is fertile to a degree and rapidly recovers after such interferences as have been noted. It is surrounded by a dyke largely built of the squared ruddy sandstone blocks that once occupied positions of greater honour in the walls of the church, but the ancient relics are virtually unprotected. There are a dozen of table-stones in the pile, and that some care was exercised in their "re-planting" is shown by several massive end-supports having been laid flat to form a foundation for a few superincumbent through-stones. One of these foundation slabs bears the incised initials and dates "R B 1665" and "W B 1666," another, showing an hour-glass and spade, with the date 1667. One of the re-set table-stones is of enormous size, measuring 6 feet

8 inches in length, 40 inches in breadth, and 9 inches in thickness. It commemorates Agnes Booth, spouse to John Swanston. Another, which still rests on its own end and central supports, is of the same size, but of the more normal thickness of 5 inches. This example shows a row of nail-head ornamentation set in a double bead that runs round its edges, and bears more than the usual number of inscriptions. Three of these may be reproduced as typical of the epigraphy prevailing on this most interesting site :—

HERE · LYES · EVPHAN · SIBBALD
WHO · DEPARTED · THIS · LIFE
THE · 6 · OF · MARCH · 1672

ALSO · MARGRET · ATCHISON
WHO · DEPARTED · THIS · LIFE
THE · 27 · OF · DECEMBER
1627 · AND · OF · HIR · AGE
41 · YEARS

ALSO · IAMES · SUANSTON
WHO · DEPARTED · THIS · LIFE
THE · 15 · OF · AGUST · 1717 · AND
AND · OF · HIS · AGE · 75 · YEARS

The erect stones are few in number, and of no particular merit, architecturally or symbolically. One, dating from 1712, shows a cherub with the wings rather artistically folded ; another, dating from 1776, shows much cruder ornamentation, in which the winged cherub-head, skull, and crossbones are prominent. But these emblems, and others commonly met with elsewhere, may here be said to be "conspicuous by their absence." The *Memento Mori* legend occurs several times ; but the charm of the remaining tombstones of later date lies in their inscriptions. These, though illiterate at times, are significant of the ways and phraseology of the past, and occasionally present us with the quaint earlier forms of such names as Buglass.

This surname occurs as follows upon a flat slab, which has chamfered edges, and measures 6 feet in length by 27 inches in breadth :—

HEIR · LIES ·
IOHN AND IENIT · BOOK
LESSES · 1668 · 1669
HERE LYES GEORGES
BOOKLESS WHO DEPA
RTED THIS LIFE THE
SEVENTH OF IVN 1748
AND OF HIS AGE 70 YEAES, etc.

COCKBURNSPATH.

There is no Scottish parish richer than Cockburnspath in the variety and interest of its historical and ecclesiastical remains. The beautiful Gothic church of Dunglass is just beyond it westwards, St Helens on the Lea enriches its seaboard eastwards, while its own pre-reformation fane occupies a central position within a quaint old-world village which still shows the "castle" of its former lairds and a charming market cross. Its bounds and environment teem with evidences of prehistoric occupation, and the remarkable ravines that carry its hill waters to the sea bear striking testimony to the natural difficulties that beset Cromwell in his fiercely contested passage towards Dunbar.

The ancient church of the parish has been sadly mangled by a series of utilitarian alterations and repairs, but enough of the old work remains to attest its original charm of character. Its builders seem to have reared its western gable against the round tower of an earlier structure, their angle buttresses and quaint sun-dial forming, with this unusual and striking object, the remarkable architectural group shown in fig. 7. An example of the old tracery has also been preserved, possibly that of the original east window, displaced by the building of the Arnot burial aisle in 1614. It now forms a bit of rather feeble ornamentation over the modern south-east doorway, which is further enriched by a dated lintel, evidently an interpolation,

of a character quite foreign to its present position and use. The illustration also shows two of the original wall-openings or windows of the tower. These were lights to the stair, which entirely fills the



Fig. 7. West Gable and Tower of the Church of Cockburnspath.

building up to the belfry stage, and are rectangular in form and widely splayed towards the interior. The openings in the upper walls are larger, cross-shaped, and without splay, and it is evident from their poor construction that they were formed by the widening of the older windows, or by the slapping of the wall for their own insertion. The

newelled stair leads from a doorway on the church level to the bell chamber, in which is hung a large bell, inscribed in Roman letters: "Thomas Mears of London Founder 1837." It measures 24 inches in diameter at the mouth, and is 21 inches in height from the lips to the bottom of the crown.

Within the manse is treasured one of the finest examples known of



Fig. 8. The "Deid Bell" at Cockburnspath.

those hand-bells once common to Scottish villages, used when intimations of death and burial were made by sextons or public criers, and known, generally, as deid-bells. This beautiful object measures $9\frac{1}{2}$ inches from its mouth or base to the top of the handle; the handle is $4\frac{1}{2}$ inches long, and $\frac{1}{2}$ -inch in thickness; the bell having a diameter of 6 inches over its mouth, $4\frac{1}{2}$ inches at the top of its mouldings, and a height of $4\frac{3}{4}$ inches from lips to root of handle. The lower mouldings,

or encircling beads, are of a rich Gothic type, the general design chaste and effective, the metal solid and heavy, and the tone extremely good. There is the further charm and interest of a lengthy inscription which, in finely raised letters $\frac{5}{8}$ inch in height, tells the story of the bell, and in these words :—

GIFTED · BE · IOHN · HENRIE · BOWER ·¹
IN · EDINBURGH · TO · THE · SESSION ·
AND · KIRKE · OF · COCKBURNSPETH · 1650.

In the year 1614 William Arnot, Lord Provost of Edinburgh and Laird of Cockburnspath, built the mausoleum, now a picturesque adjunct of the eastern gable of the church. The Arnot arms (chevron, mullets, and crescent), the initials W A, and the date 1614, appear on and under the gable finial of the aisle; while over the entrance remains the matrix of a vanished panel which doubtless had borne references to the Arnot pedigree. The massive stone in which this panel had been set, acts also as the lintel of a three-light window whose mullions have given place to a bit of old iron grille work, which, to all appearance, had done duty in the defence of some other building, and at some very distant date. Clearly, also, the original entrance under these objects was much wider than the present doorway, and that the vault was much used for burial purposes was amply proven some years ago when its interior accumulations were disturbed in order to place a furnace for church-heating purposes some feet beneath their surface.

The Arnot aisle measures 15 feet 8 inches in length by 21 feet, a splayed base adding 10 inches to the breadth indicated by the latter figures. It is remarkably well built of finely squared sandstone; the

¹ Sir J. Balfour Paul kindly notes that John Henrie, son of Adam Henrie in Leith Wynd, was apprenticed to John Forrest, bower [i.e. bowmaker], Edinburgh, 21 April 1630; and that he married Janet Wallace, 2 November 1637. He was probably the son of that Adam Henrie who married Beatrix Aleson, 25 April 1610.

heavy stone roof, the boldly moulded projecting eaves, and the masonry generally being of a massive and superior character. The flagged roof is supported by a pointed arch, whose apex rises 13 feet over the present floor level, and may have been 3 or 4 feet higher in



Fig. 9. Arms of Hay of Errol.

other days. Of tablets or inscriptions the interior walls are entirely void ; but the vault holds one feature of interest, and of not a little speculation, in the form of a late seventeenth-century flat stone, whose only adornment is the armorial panel shown in fig. 9.

We have here a representation of the arms of the Hays of Errol with their motto, *Serva Jugum*, dating, so far as style and work-

manship can determine, from the latter half of the seventeenth century. The initials D · I · H · might be read alternatively as Dominus, Johannes, or Jacobus Hay (if we knew who they were), or they may stand for those of Dame Isabel Hay, twelfth child of William, 10th Earl of Errol, who, according to the register of Canongate Parish, was baptised there in 1611. This lady, as is noted in the new *Scottish Peerage*, had, in 1635, a birth brieve under the Great Seal, "probably intended to secure consideration for her on her travels, as she was an invalid and obliged to live abroad for her health. She was one of the three noble ladies whom Gilbert Blakhal served" (see his *Brief Narrative*, Spalding Club). There is no information recoverable meantime regarding the reason for the interment of D · I · H · within the burial vault of the Arnots, but the period is not remote, and the point may yet be satisfactorily explained. The slab, which seems to have been of the table-stone type, has moulded edges, and is 6 feet long by 30 inches in breadth. The central shield, shown in fig. 9, measures 21 inches by 16½ inches, and was photographed from a rubbing made in August 1913.

The surrounding graveyard, which, quite recently, was the subject of a thorough and very commendable renovation, shows only a few specimens of the characteristic symbolism of the seventeenth and eighteenth centuries. The scales of the merchant, the crown of immortality, the skull and crossbones, the winged cherub-head, the hour-glass, and, curiously enough, the *ribs* of a human body, all appear in conformity with prevailing custom and design; the best representation of emblems more purely secular appearing on the uninscribed memorial of a blacksmith, shown in fig. 10. The boldness of the relief seen here is quite remarkable, the designs being raised nearly 3 inches from the surface of the stone. A winged cherub-head (very worn, but showing the curls of a periwig), crossbones, skull, pincers, anvil, and two hammers, form the designs so realistically depicted here.



Fig. 10. A Blacksmith's Memorial at Cockburnspath.



Fig. 11. A Resurrection Angel.

Nothing quainter could be found anywhere than is the trumpet-blowing angel represented in fig. 11. The design is crude to the point of absurdity, but it tells its story well; and the angelic wings are attached to the body with more certainty than is commonly experienced. The clouds from which the figure emerges are a somewhat knotty problem, but there they are, and all in good and orthodox relationship to the emblems of our frail humanity—the hour-glass, crossbones and skull, which occupy the lower plane. Very quaint also is the inscription incised on the reverse, with a somewhat later date than might be expected from the cut and character of the symbols:—

HERE · LYIS · MARGRET
WHIT · SPOWS · TO
IOHN · ROBERTSON
WHO · DEPARTED · TH^s
LIFE · THE · 18 · DAY · OF
IWNE · 1724 · AND
OF · HIR · AGED · 61
YEARS

To Mr W. D. Lowe, of Messrs Tods, Murray, & Jamieson, W.S., who gave permission to examine the ground at St Helens; to Mr Johnstone, head gardener at Dunglass, and to Mr Sanderson of Old Cambus West Mains, both of whom gave valuable assistance in connection with the search, the thanks of the Society are most cordially tendered. Very gratefully also are acknowledged the services of Mr James Moffat, Edinburgh, who supplied the excellent photographs numbered 4 to 8, 10 and 11; of Mr J. U. Reid, Edinburgh, who photographed those numbered 1 and 3; of Mr F. Inglis, Edinburgh, who photographed figs. 2 and 9; and of Mr John Watson, F.R.I.B.A., F.S.A. Scot., who furnished the careful drawing of the arch mouldings shown in fig. 2, and supplied the valuable notes therewith connected.

IV.

ACCOUNT OF THE RECENT DISCOVERY OF THE REMAINS OF DAVID'S TOWER AT EDINBURGH CASTLE. BY W. T. OLDRIEVE, F.R.I.B.A.,
Vice-President, PRINCIPAL ARCHITECT FOR SCOTLAND OF H.M. OFFICE OF WORKS.

The commanding position of the Castle of Edinburgh naturally suggests the extreme probability of there having been a fortified retreat there from very early times. A Royal residence certainly existed in the time of Queen Margaret, one of the principal apartments being known as Queen Margaret's Chamber. The exact site of this building is not now known, but it is recorded that in 1314 Ranulph, Earl of Moray, in pursuance of Bruce's policy, demolished all the buildings of the Castle except the little Chapel of St Margaret, in order that no shelter should exist in case of re-occupation by the English. In September 1335, King Edward III. ordered the fortifications to be rebuilt, but it was thirty-two years later, in 1367, when the English invaders had at last been permanently expelled, that the building of King David's Tower was commenced, the work taking over ten years to complete.¹

This, I now submit, is the tower the recent re-discovery of which I am about to relate.

The work of exploration followed upon an inspection early in 1912 of the older parts of the Castle by a Sub-Committee of the Royal Commission on the Ancient Monuments of Scotland. This Sub-Committee was charged with the survey of the historical buildings of Edinburgh, and consisted of Professor G. Baldwin Brown, Dr Thomas Ross, and myself. We found in a coal-store (fig. 5), connected with

¹ *Abstracts from the Exchequer Rolls* gives the first entry for payment for building the "new tower of Edin." at 20th March 1368-9, and the last entry "for the complete building and construction of the 'Gate Tower'" at 26th March 1379.

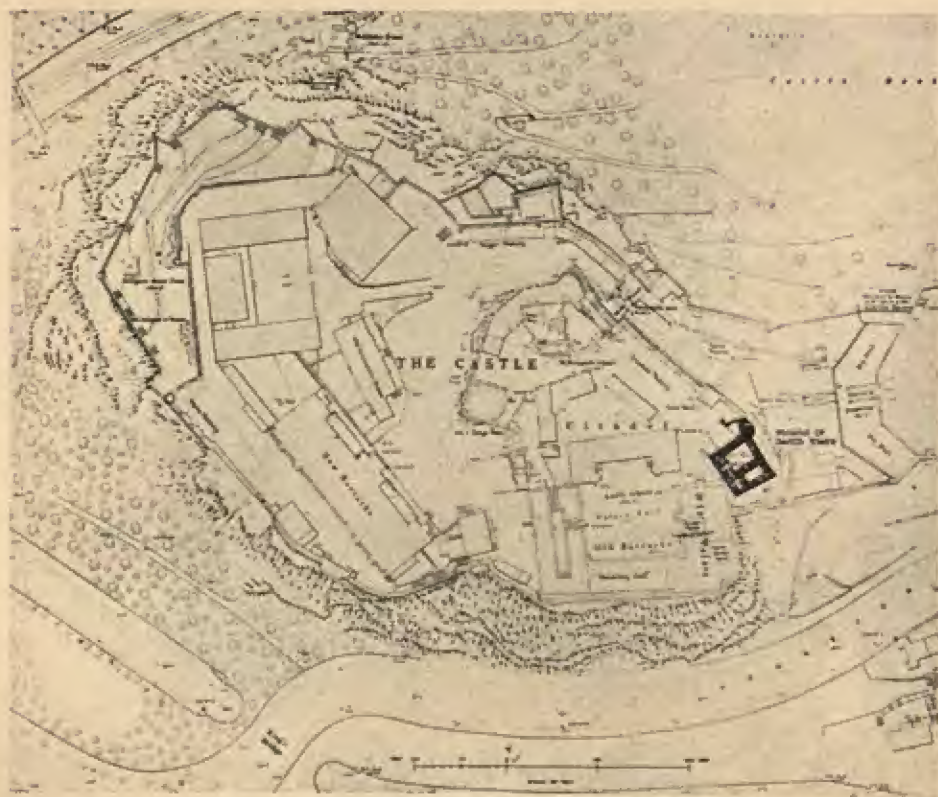


Fig. 1. Key-Plan of the Castle, showing the position of David's Tower.



Fig. 2. View of Edinburgh Castle from South-east.



Fig. 3. View of Edinburgh Castle from the East.



Fig. 4. North-east Angle of Palace.



Fig. 5. Canteen Coal-cellar until 1912.

the soldiers' canteen at the north-east corner of the palace that the construction of the masonry indicated work of a much earlier character than that of the palace building. In particular, we noticed

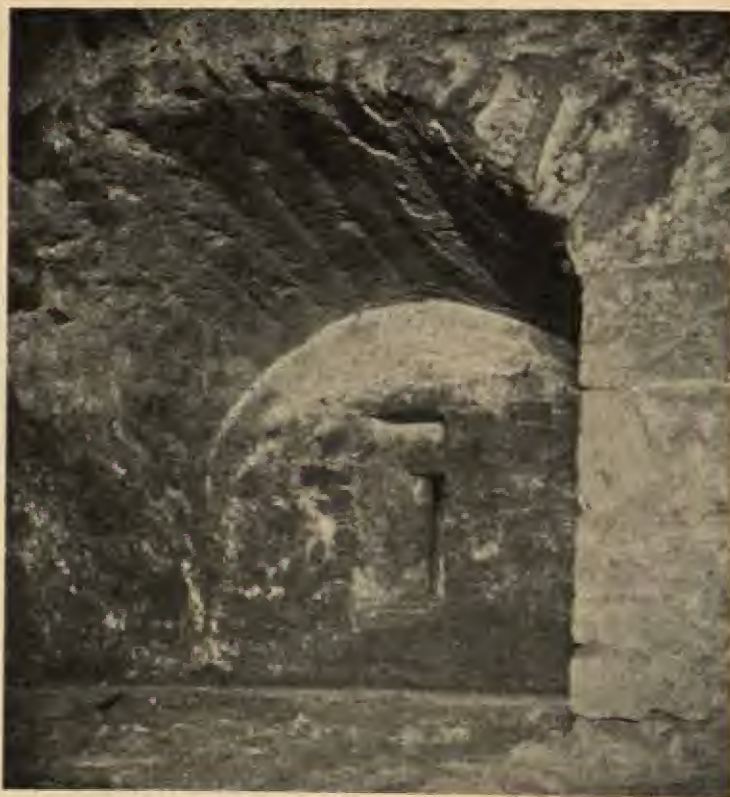


Fig. 6. Vaulted Recess with Shot-hole (after removal of coal-cellar floor).

the substantially constructed stone-vaulted recess in a wall 7 feet 6 inches thick, with the narrow window slit or shot-hole (fig. 6), which, though now below the level of the Half-Moon Battery, had obviously been above ground originally. It was suggested that this window

might be traced from the outside by excavation from the level of the Half-Moon Battery, and so a commencement was decided upon.

The work of excavation from the Half-Moon Battery commenced



Fig. 7. Outer face of Original Wall of Tower where first exposed.

on the 12th August 1912, and the shot-hole or window referred to was soon reached at a depth of 5 feet. Interest was soon quickened by the appearance of shattered masonry upon the outer face of the wall (fig. 7), evidently the result of bombardment by cannon, which

supposition was confirmed by the finding of two solid iron cannon balls and fragments of burst shell in the debris directly under the damaged wall.

Now mortars or bombardes were first used for shelling purposes on land against Wachtendonck, in Gueldreland, in 1588, but the use of the explosive shell had then been known to the English for more than fifty years. About 1543, Ralph Hogge, the Sussex gun-founder, brought over a certain Fleming named Peter Van Collet, who devised or caused to be made certain mortar pieces, "being at the mouth from 11 to 9 inches wide, for the use whereof the said Peter caused to be made certain hollow shot to be stuffed with fyrework, whereof the bigger sort for the same has screws of iron to receive a match to carry fyre, to break in small pieces the said hollow shot, whereof the smallest pieces hitting a man would kill or spoil him."¹

At a depth of 15 feet it was reported that the extrados of stone vaulting had been found. An opening was at once authorised and formed, and on the 23rd August the vault beneath was entered. Loose earth was found almost filling the vault, but the clearing of this away to a depth of 32 feet revealed the doorway and well-worn steps of what appears to me to be the lower entrance to the ground floor of the earliest part of the tower (fig. 8). This doorway, which is in a well-constructed stone wall 8 feet 3 inches thick, has a pointed segmental head formed by two sloping lintels meeting at the apex, not by a truly constructed arch. This type of door head is usually associated with early mediæval building, especially in England, where there are instances of its use with straight stones in Saxon times, as at Barnack and Brigstock Churches, Northamptonshire.² The illustration fig. 9 is of the inner side of

¹ *British Battles on Land and Sea*, p. 154.

² *Parker's Glossary*, 4th ed., vol. I. p. 139.

doorway, and shows the later addition to the thickness of the earlier outer wall. In Scotland the double lintel is used throughout a



Fig. 8. Original Entrance to earliest part of Tower.

considerable period, while in Ireland it is used in late sixteenth century, as at Ballybur and Foulscrath Castles, Kilkenny.¹

This entrance doorway is formed with a $3\frac{1}{4}$ -inch splay entirely round the outer edge, the check being $3\frac{1}{2}$ inches deep. A massive door once

¹ *Proceedings*, 1908-9, pp. 51 and 55.

protected the tower. Holes in the door jambs show that a bar—probably of oak—about 5 by 5 inches, sliding into a hole in the north side, served as a fastening on the inside.



Fig. 9. Inner Side of Original Entrance.

An area, enclosed by railings above this part, has now been formed, so that visitors can see a part of the outer face of the tower wall from the Half-Moon Battery (fig. 4).

The size of the outer vault first entered, after clearing away the rough rubble backing against the east wall, is 22 feet 6 inches by 12

feet 6 inches, the height being about 16 feet to the crown of the vault, which is semicircular. The surrounding walls are about 8 feet thick.

On clearing away the rubbish from the two loop-holes or windows on the south side of this vault, access was obtained to the eastmost of the two lower vaulted chambers of irregular form which occupy the space between the tower and the curved wall of the Half-Moon Battery. These chambers contained a considerable amount of loose soil, which was cleared away. The size of the stalactites from the vaulted roof (fig. 10), and the stalagmites rising from the ground (fig. 11), some extending to 7 feet 6 inches long, indicated that these vaults had not been disturbed for a very long time.

A wall, 5 feet thick, was found to divide the two lower vaults, the wall having a doorway 3 feet wide. There are indications of a pathway over the rocks leading eastward from this doorway.

Our chief interest now lay in the clearing out of the entrance to the tower. The interior, right out to the outside of the doorway, was solid with soil, but, after clearing out the doorway to the thickness of the 8-foot wall, the soil commenced to fall in, great care being necessary to avoid accident to the men engaged in the work. It was then found that the paving of the coal-cellar above rested directly upon the loose soil which had filled up the entrance hall of the tower.

In the entrance hall the doorway on the south side (fig. 12) was discovered on 5th September, and by this doorway access was obtained to the westmost of the outer vaults. This doorway is peculiar in its having three door checks. These checks indicate that two of the doors opened outwards, while one opened inwards. There are here no bar-holes in the stonework. There is a sunk pit 4 feet wide and 5 feet 6 inches deep, with rock floor immediately beneath on the inner side of the wall.

On the west side of the entrance hall or lobby a recess was found (fig. 13) with narrow window looking westward, and with a lamp bole or cupboard as shown.



Fig. 10. Outer Vault with Stalactites.



Fig. 11. Outer Vault with Stalagmites rising from debris.



Fig. 13. Recess on west side of Hall.



Fig. 12. Door on south side on higher level. (Believed to be later.)

On clearing away the soil at the north end of the entrance hall a doorway (fig. 14) was found at the top of a flight of three steps, the doorway having been built up with rubble masonry.



Fig. 14. Doorway on north side of Entrance Hall.

On the surface of the stonework of this part of the building a number of masons' marks were found (fig. 15). These masons' marks are similar in type to what have been found in many mediæval buildings, and so far as I am aware they cannot, though interesting in themselves, be relied upon to indicate the date of the building.

Cutting through the rubble infilling of the doorway at the north end of the lobby, communication was obtained with the southmost of three disused water-tanks, which, however, contained about 3 feet of water. The water was pumped out of the tanks, and it was found that each tank was constructed in a different manner. The southmost tank was lined with brick and coated with asphalt about 1 inch thick; the middle tank was lined with wood boards covered with sheet lead; while the northmost tank was lined with rough stone slabs rendered with Roman cement.

It was with great difficulty that the north wall of the tower could be traced. The bottom of the middle tank had been formed directly upon the wall so as to leave no indication of its existence. By careful trenching, however, and by following the slight clues which were found, we were at last successful in tracing it. Steps at the north-west interior angle were found leading to an external doorway of later date. This apparently communicated externally, before the tank was formed, by steps upward to the courtyard, and by steps downward to the basement of the palace building. By reducing the width of the flight of steps upward a convenient entrance has been obtained to the vaults (fig. 37).

Outside the lines of the ancient tower, but joined to it at the north-east corner at an angle of 110 degrees with the north face of the tower, the remains of a massive masonry wall were revealed; within this is a vaulted recess (fig. 16), with a stone-built gun platform 5 feet above the present level of the floor of the tank. In the external wall, formed by carefully tooled ashlar, is a tapered loop-hole (fig. 17). It is oval in section and trumpet-mouthed at the interior face of wall. The axis of the loop-hole is carefully aligned so as to point directly down the High Street (fig. 18). The building of the Half-Moon Battery wall had covered up this ancient loop-hole, but it has now been exposed permanently to view (figs. 19 and 20).



Fig. 15. Masons' Marks on stonework.



Fig. 16. Vaulted Recess of Battery with Shot-hole.

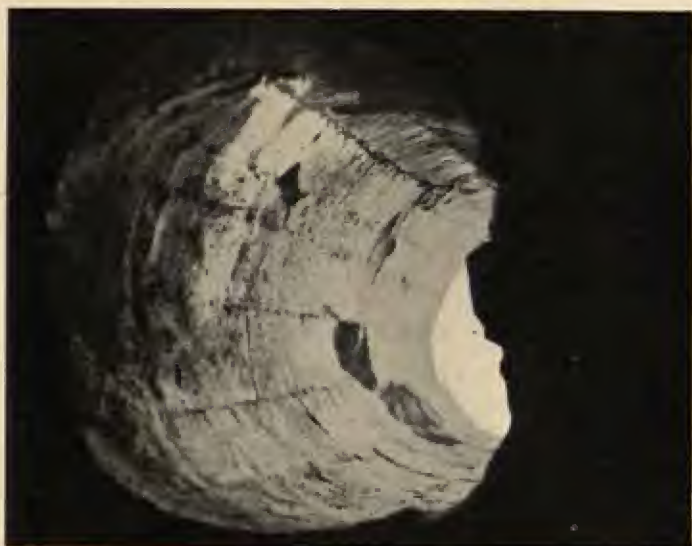


Fig. 17. Tapered Loop-hole of Battery.



Fig. 18. View through Loop-hole showing alignment with High Street.



Fig. 19. Half-Moon Battery with the ancient Loop-hole exposed.



Fig. 20. Recess on outer face of Half-Moon Battery showing original Loop-hole.

The western end of the northmost tank is formed by a 3-foot wall of apparently sixteenth or seventeenth century work. In this wall are two small windows and a doorway, the sill of which is level with the gun platform. It seems probable that this was the original floor level, and that this doorway opened upon the courtyard, which, in that case, must have been about 8 feet lower at this point than it is at present. There is little doubt that the general plans and levels of the earlier palace buildings adjoining David's Tower differed very considerably from the buildings as we now know them.

The work of clearing out soil and rubbish from the vaults was completed in October last, since which date a wood stairway has been constructed to give easy access for visitors to the tower from the ground-floor level of the palace to the lower vaults, a depth of about 40 feet.

The following articles were found during the excavations. They have been arranged in tabulated form so as to show the date when found, and the exact position :—

Date when found.	Description of Articles found.	Approximate Distance below Half-Moon Battery.	Position where found.
Aug. 1912	Four fragments of burst iron shell (fig. 21)	15 feet	Over vaulting of outer chamber.
"	Two solid iron 6-inch cannon balls (fig. 22)	"	"
"	Six explosive 6-inch cannon balls	"	"
Sept. 1912	Four fragments of freestone 6-inch shafts and bottle mouldings (fig. 23)	"	"
"	One $\frac{1}{2}$ -inch lead bullet	32 feet	In outer chamber.
"	Three small stalagmites	"	"
"	One small tassel of gold lace	"	"

Date when found.	Description of Articles found.	Approximate Distance below Half-Moon Battery.	Position where found.
Sept. 1912	Two small coins ¹ (an English silver penny from London Mint of Edward I. or II., early fourteenth century; and a bodle or turner of Charles II. (copper))	32 feet	In outer chamber.
"	One small ivory toilette bottle with stopper, 3½ inches long (fig. 24)	"	"
"	One clay tobacco pipe, whole, and twenty fragments of other similar pipes (fig. 25)	"	"
Mar. 1913	Six cannon balls, 6-inch diameter	"	"
May 1913	One forked bone or horn of small animal	"	"
July 1913	One moulded 8 by 8-inch mullion stone, section	"	"
Oct. 1913	Bones of animal, and small fragments of oak	"	"
"	Two fragments of stone cannon balls, 8- and 3-inch diameter	"	In garde robe off outer chamber.
Sept. 1912	Four fragments of glass wine flagons, one having crest of Earl's coronet above the letter "L" (probably Earl Lennox), and one having crest of ducal coronet above winged heart (probably Duke of Queensberry) ² (figs. 26, 27, and 28)	15 feet	In entrance hall.
"	Seven pieces of earthenware jars (fig. 29)	18 feet	"

¹ Dr. George Macdonald, who has kindly identified these coins, states that they were the staple currency of Scotland at this period.

² Mr. W. Rae Macdonald, Albany Herald, who has examined these fragments, states that William Douglas, third Earl of Queensberry, was created Duke of Queensberry, 3rd November 1584. The flagon therefore cannot be earlier than 1584. Lord Guthrie has suggested to me that it may possibly have belonged to the Duke of Queensberry who was Governor of Edinburgh Castle in 1682. Robert, seventh Earl of Lennox, resigned his earldom in favour of his nephew, Esme Stuart, who was created Duke of Lennox in 1581. It would therefore appear that the flagon of which this fragment formed a part is earlier than 1581.

Date when found.	Description of Articles found.	Approximate Distance below Half-Moon Battery.	Position where found.
Sept. 1912	Ten fragments of glazed earthenware, eight of which form part of a large platter, 14-inch diameter, decorated with a rude geometrical pattern (fig. 30)	18 feet	In entrance hall.
"	One fragment of yellow glazed brick	"	"
"	One fragment of glass ornament	"	"
"	One fragment of plain glass	"	"
"	One fragment of white stoneware jar	"	"
"	Three metal buckles, with fragments of leather strap	"	"
"	One soldier's iron helmet (fig. 31)	30 feet	In south vaults.
"	Two solid 6-inch cannon balls	"	"
"	One stalagmite, 7 feet 6 inches high	"	"
"	Forty-one stalagmites of small size	"	"
"	One stalactite, 5 feet long	"	"
"	One stalactite, 3 feet 6 inches long	"	"
Dec. 1912	Fragment of moulded stone (section, 12 by 11½ inches) (fig. 32)	40 feet	"
Mar. 1913	Two solid 4-inch cannon balls	"	"
"	Two moulded rybates, apparently parts of oriel windows of old palace (fig. 33)	50 feet	"
April 1913	Three solid cannon balls, 6-inch diameter	"	"
"	One piece of explosive cannon ball	"	"
"	Seven pieces of cannon balls	"	"
May 1913	One mason's iron hammer head, 10 inches long	52 feet	"
Mar. 1913	Three solid iron cannon balls, one 7 inches, one 6 inches, one 4 inches	18 feet	Below window in south tank.
April 1913	One white metal spoon	20 feet	In middle tank.
"	One lead washer	"	"
Mar. 1913	One solid iron cannon ball, 7½-inch diameter	15 feet	"
April 1913	Three fragments earthenware jars	12 feet	In north tank.
"	Two small stalagmites	"	"
Mar. 1913	Two solid cannon balls, 6-inch diameter	15 feet	"

Also a few shells and some bones of animals found in various parts of the excavations.



Fig. 21. Fragments of Explosive Shell found outside original Tower.



Fig. 22. Solid Cannon Balls found outside original Tower.



Fig. 23. Fragments of Stone Shafts.



Fig. 24. Small Ivory Toilette Bottle.



Fig. 25. Tobacco Pipes.



Fig. 26. Fragments of Wine Flagon.



Fig. 27. Impression on Wine Flagon, with coronet and initial (probably of Earl Lennox).



Fig. 28. Impression on Wine Flagon, with dual coronet (probably of Duke of Queensberry).



Fig. 29. Fragments of Earthenware Vessels.



Fig. 30. Fragments of glazed Earthenware Vessels.



Fig. 31. Soldier's Iron Helmet.



Fig. 32. Fragments of Moulded Stone, apparently from mullions of windows.



Fig. 33. Moulded Stone Rybate, apparently from oriel window.

The Ancient Well.—Intimately connected with the fortunes of the Castle is the ancient well, lying about 16 yards to the north of David's Tower. When it was originally sunk is entirely a matter of conjecture, and, so far as I have been able to ascertain, no reference to it appears in historical records until 1313, when Ranulph, Earl of Moray, captured the Castle, and shortly afterwards demolished the buildings and filled up the well, obliterating the site of it so that the English might not be able to hold the Castle if ever they sought to occupy the position. It was not until 1381, *i.e.* sixty-eight years after, that the well was again found and cleaned out. For nearly two hundred years the well was used, and then it was again choked by the falling masonry and debris caused by the cannonading of Drury's artillery in 1573. The construction of the upper part of the well indicates that the Regent Morton, when forming the Half-Moon Battery, cleared out the debris, and, by an ingenious piece of stone vaulting, brought the irregular-square shaped, rock-cut, plan to a circular form, carrying up the well to the new level required—a distance of about 24 feet.

As no survey of this historical well, although probably one of the most interesting in Britain, appeared to exist, it was thought advisable, in connection with the exploration of David's Tower, to clean out and take measurements of it. It was, moreover, hoped that articles of interest might perhaps be found at the bottom.

On removing the flagstone cover on 20th October last, water was found in the well to the depth of 60 feet. By the aid of a pulsometer steam-pump the well was pumped dry, and the remains of a disused pump and other material removed, including a bed of sludge 1 foot 6 inches deep. The clearing out of the well was completed by the end of November, and I had the interesting experience of being let down in a bucket to the bottom—a distance of 110 feet.

For a depth of 23 feet 10 inches from the top, the well is circular in

section, 4 feet 10½ inches in diameter, and well constructed with coursed ashlar stone. At this depth there is a change in the form of the well, it being then roughly hewn in the rock, of an irregular square in section, about 10 feet from side to side. The well, however, does not continue of this section to the bottom, but diminishes irregularly until at the very bottom the size is about 4 feet square. It is estimated that the capacity for water storage, with 60 feet deep of water, would amount to about 28,500 gallons.

The level at which the roughly rock-hewn section changes to the circular section coincides with the level of the top of the exposed rock at the nearest point eastward on the outside of the Half-Moon Battery wall. Moreover, the general level of the rock surface on the nearer side of David's Tower also coincides with the same level. This seems to me to indicate that before the construction of the Half-Moon Battery after the siege of 1573, the level of the top of the well was about 24 feet lower than it is now.

The support of the circular masonry over the square space beneath is ingenious, though quite simple, and sound in construction. A barrel-vault, almost semicircular, covers one half of the square space, the centre of the remaining half being perpendicularly over the centre of the bottom of the well. Then a half barrel-vault is sprung from the rock side of the well, its crown line abutting against the exposed end of the barrel-vault first formed.

The pumping arrangements for filling the underground tanks already referred to were clearly indicated by what was found to exist. About 2 feet 6 inches from the top of the well a 3-inch diameter lead pipe led to the tank, the water having evidently been pumped into this pipe. An overflow channel of built stone leads from the nearest tank to the well, so that anyone working at the pump would at once be able to see when the tanks were fully supplied with water. The three tanks are connected by overflow openings.

In order that this historic well may be seen by visitors, a circular

raised stone parapet has now been provided, and a wrought-iron grille placed over the top (fig. 34).

The following is a list of the articles recovered from the well :—

One modern-pattern treble-barrel gunmetal pump, fixed on oak bearers about 85 feet from the surface, with 20 feet of 2-inch copper suction pipe (fig. 35).

A quantity of oak bearers used for pump.

Four modern gunmetal couplings for pump.

One sponge head of a rammer for muzzle-loading cannon, 4-inch bore.

One iron cannon ball, 4-inch diameter.

Four pieces of explosive cannon ball.

One piece of explosive cannon ball fixed by oxidation to flat stone.

Four modern hammer heads.

A few skulls and bones of small animals.

One Aylsham (Norfolk) Town halfpenny token, date 1795.

One silver coin, undecipherable. Probably a George III. shilling.

One brass uniform button, with initials R.L.M. 9.

Conclusions.—Having now related how we came to make these explorations, and having described briefly what has been found, I should like to state the grounds upon which I have come to the conclusion that what has been discovered is David's Tower. I wish first to say that I am indebted to Mr W. Moir Bryce for much information of historical interest, which has thrown light upon the subject. From his knowledge of records and his studies of history as relating to Edinburgh Castle, he has been able not only to impart some of his enthusiasm, but has been most kind in confirming or refuting my suggestions from time to time, as I have tried to unravel the problem.

It has long been known that the masonry of the little vaulted chamber formerly used as the canteen coal-cellar must have belonged to some building far earlier than the oldest part of the palace buildings as now seen above ground. Indeed, the connection of this chamber with David's Tower is not a new suggestion. Since commencing to write this paper, I have found that Mr Hippolyte J. Blanc, in conducting a party of the Edinburgh Architectural Association over the Castle in February 1891, said that he thought he had in this coal-cellar found



Fig. 34. View showing new Well-head to ancient Well.



Fig. 35. Triple-cylinder Pump found at bottom of the Well.

traces of the foundations of David's Tower within the Half-Moon Battery. "He had seen there the remains of old masonry, and of a pointed arched doorway, indicating the architectural features of the period."¹

The earliest known view of the Castle is that which is found in the very imperfect bird's-eye view of the town of Edinburgh prepared for the Earl of Hertford's expedition in 1544. It cannot, however, be said to throw much light upon the subject. There is, however, an interesting contemporary description of the Castle which may be quoted. From this Military Report we learn that "The situation is of such strength, that it can not be approached but by one waye, whiche is by the hyghe strete of the towne, and the strongest parte of the same lyeth to beate the sayde strete. And consyderynge the strength of the sayd Castell, with the situation thereof, it was concluded not to lose any tyme, nor to waste and consume our munition about the siege thereof, all be it the same was courragiously and daungerously attempted, tyl one of our pieces with shotte out of the sayde castel was stroken and dismounted."²

A much more valuable view was prepared shortly after the siege of 1573 (fig. 36). Along with the account of the siege is annexed a facsimile of the curious and rare plan which belongs to the first edition of Hollinshead (*Chronicles*), printed in 1577, being a bird's-eye view of the town and Castle of Edinburgh at the time of the siege. It is stated in the *Bannatyne Miscellany* that there can be little doubt that it was engraved from a sketch made on the spot—probably by Rowland Johnson, who is stated to have been then engaged in "making of a platte" or ground-plan of the city.³

Although it is quite likely that the "platte" of the city prepared by Rowland Johnson would be made use of, it is probable that the

¹ *Trans. of the Edinburgh Architect. Assoc.*, vol. i. p. 163.

² *Bannatyne Miscellany*, vol. i. p. 184.

³ *Ibid.*, vol. ii. p. 68.



SIEGE OF THE CASTLE BY SIR W. P. 1773.

Fig. 36. Bird's-eye View of Castle from Plan drawn shortly after Siege of 1573.

bird's-eye view as published in 1577 was drawn by or under the direction of Churchyard the poet. However this may be, and despite its manifest inaccuracies, this view certainly helps us to identify David's Tower.

The following description of the Castle is given in the Survey "taken of the Castle and Town of Edinburgh in Scotland by us, Rowland Johnson and John Fleminge, Servants to the Queen's Majesty, by the Commandment of Sir Wm. Drury, Knight Governor of Berwicke, and Mr Henry Killigrave, Her Majesty's Ambassador, as followeth—(27th Jan. 1572-3)¹ :—

"Furste, we find the Castle standing upon a natural main rock, on great heights, like 600 feet long and 400 feet broad.

"On the fore part eastward, next the town, stands like 80 *foote* of the *haule*,² and next unto the same stands 'Davyes Toure,' and from it a curtain with 6 cannons, or such like pieces in loops of stone looking in the street-ward: and behind the same stands another tier of ordnance, like 16 feet climb above the other, and at the North end stands the Constables' Tower, and in the bottom of the same is the way into the castle with (XL) steps.

"Also we find upon the said east side a 'spurre' like a bulwark, standing before the foot of the rock that the said curtain stands on, which spurre encloseth that side, flanked out on both sides: (and) on the South side is the gate where they enter into the Castle, which spur is like 20 feet high, vamuired with turf and baskets, set up and furnished with ordnance.

"The lowest part of this side of this curtain wall is 24 feet high, and the rock under the foot of the wall, where it is lowest, is 30 feet. Davyes Tower is about 60 feet high, the Constables' Tower is like 50 feet."

¹ *Bannotyne Miscellany*, vol. ii. p. 68.

² In M'Gibbon and Ross's *Castellated and Domestic Architecture of Scotland* (vol. i. p. 451), the word is given as "waule," which is better understood.

The "80 foote of waule" may be that part of the lower curtain which was straight, and which ran parallel to the southern face of David's Tower. The curtain with six cannons "looking in the street-ward" was evidently the wall going northward from the tower, and the other "tier of ordnance like 16 feet climb above the other" appears to have been the further battery northward beyond the small tower on the wall. This seems quite clear from what follows:—"And at the North end stands the Constables' Tower, and in the bottom of the same is the way into the castle with 40 steps" (fig. 38).

It will be seen also that the raised doorway and the two small windows upon the lower floor looking south, shown in the bird's-eye view of 1573, agree with what we have found, while the small fragment of wall abutting upon the tower seems to mark the western termination of the wall of defence which was built so hurriedly after Flodden in 1513; or it may be of the earlier city wall of 1450.

The "curtain with 6 cannon" referred to as extending from David's Tower seems to be indicated at its junction with the north-east angle of the tower by the massive wall in which the shot-hole has been found as described, "looking in the street-ward," which it does. The level of the floor of the platform at this shot-hole as compared with the rock level nearer the position where the Constables' Tower must have stood confirms the 1572-3 account of the further "tier of ordnance like 16 foote clym above the other."

In Grant's *Memorials*¹ it is stated that "in 1638, on the 19th November—the birthday of Charles I.—a great portion of a curtain wall, which was old and ruinous, fell down and rolled in masses over the rock." There is also an entry in Sir Thos. Hope's Diary, under 20th November 1639, as follows:—"This day a part of the castel wall quhilk is toward the entrie on the south, fell in the nycht, with sich a noise that all within took it for a myne or surprise of the Castell of Edinburgh." The rebuilding of this "curtain wall"

¹ *Memorials of the Castle of Edinburgh*, 2nd ed., p. 105.



Fig. 37. New Steps for access to the Vaults of David's Tower.



Fig. 38. Steps as they now exist near site of "Constables' Tower."

strengthened by a projecting batter, appears to me to probably account for a feature on the north-east face of the Half-Moon Battery wall (figs. 39 and 40) which has greatly puzzled architects and antiquarians. It was thought by some that this feature might indicate the position of a former important building, but in the light of the recent discoveries this now appears quite unlikely.

We can now form some idea of the plan of the tower, both as it was originally built in 1367 and as it existed in 1573 before the bombardment.

Originally the tower was, I think, L-shaped on plan (fig. 41), having an entrance on the lower level at the re-entering angle, and with one principal apartment on each floor about 36 feet 6 inches by 22 feet. There may have been an entrance also to the lower floor from the higher level of the rock surface at the north-west corner, or more probably there may have been a spiral stair here connecting the ground floor with the floors above, as in the case of the keep of similar date at Craigmillar, which was built some ten years after the building of David's Tower, and of similar plan and size.¹

It would appear that at a later date the lower entrance at the re-entering angle was found insecure, and that an addition was made at the south-east corner, making the plan almost a square (fig. 42). It seems, however, from an examination of the masonry, that before this outer chamber was formed the entrance was strengthened by the thickening of the walls as indicated by the plan. The building of this addition to the tower must, it appears, have been after 1544 and before 1573. The bird's-eye view of 1544 shows the tower not to be square on plan, while the view published after the siege of 1573 distinctly shows it to be square. Moreover, we found the masonry of the wall, which had originally an outside face, but which was after-

¹ Illustrated by M'Gibbon and Ross in *Castellated and Domestic Architecture of Scotland*, vol. i. p. 189.

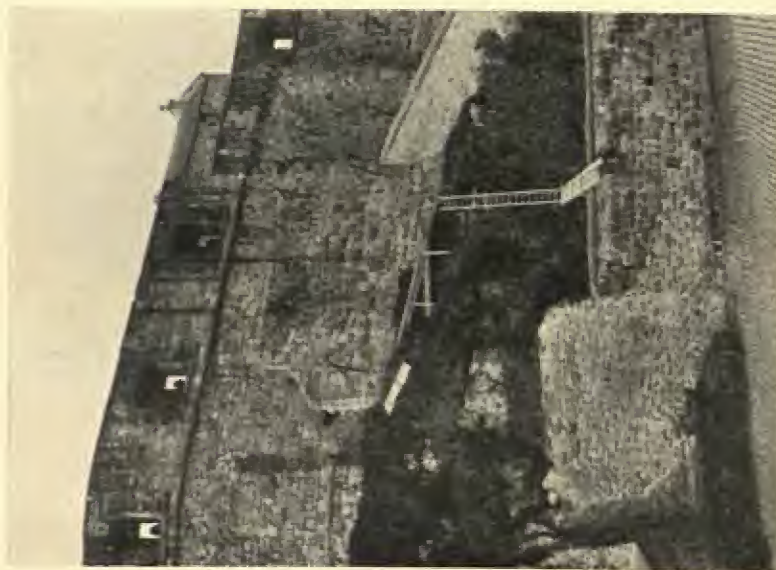


Fig. 39. North-east face of Battery Wall, showing part rebuilt with batter.

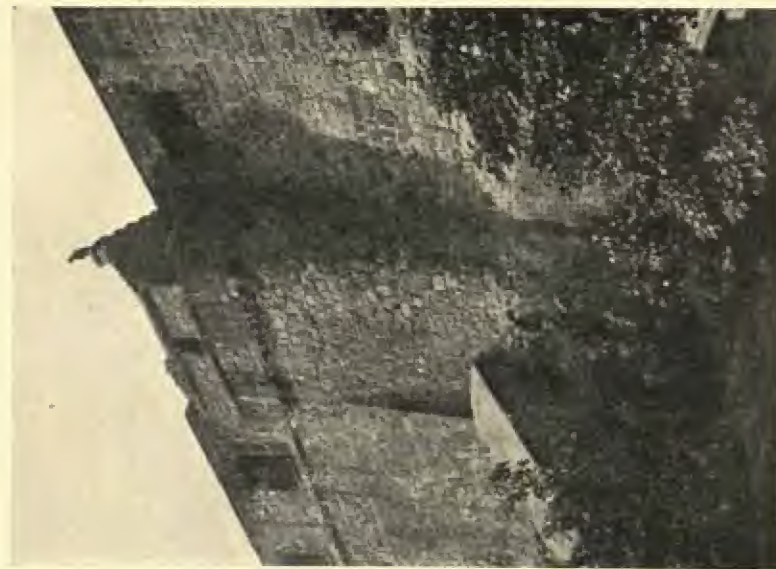


Fig. 40. View at junction of part rebuilt with older masonry.

wards enclosed, damaged by shell, the remains of the exploded shell lying amongst the debris beneath. Now, explosive shell was, as already stated, only introduced into England in 1543. Having abolished the lower entrance, the doorway on the south side was probably formed (if it did not previously exist) 21 feet above the

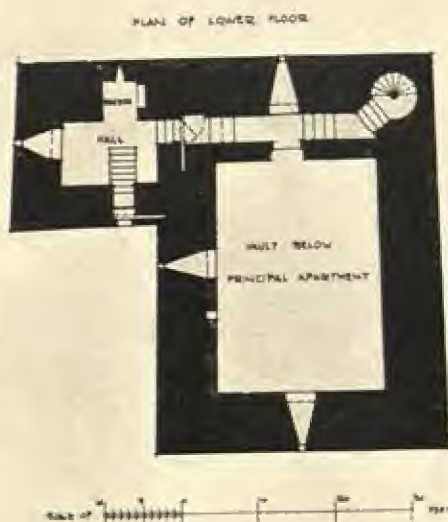


Fig. 41 Plan of David's Tower as it probably was originally.

surface of the rock outside, access being doubtless gained for greater security by a ladder or movable steps.

For defence this higher probably and later entrance is well planned. The hall, having recesses on either side, could accommodate men in positions of advantage to resist attack from assailants; while it is possible that the sunk pit on the inner side of the entrance (see fig. 12), while serving as storage space for a rope ladder, might be intended

as a trap into which unwary strangers attacking the fortress would be likely to stumble just as they were engaged with the defenders of the keep.

Reference has been made to the falling masonry of David's Tower having choked the well. It is interesting to note in this connection

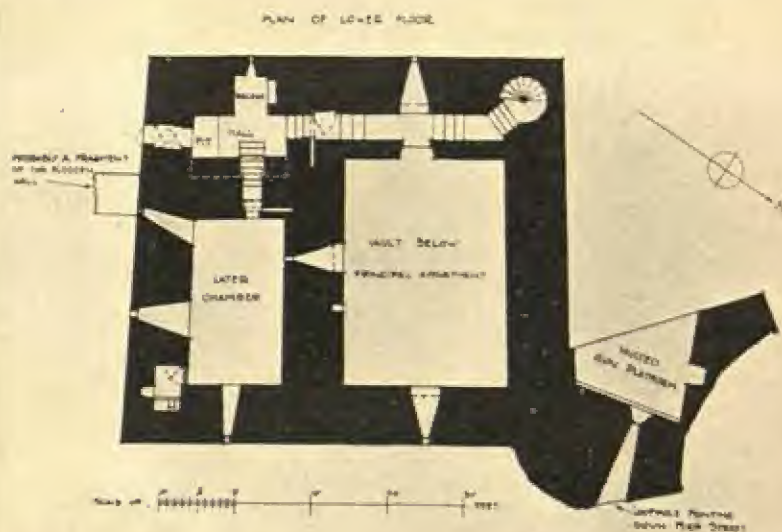


Fig. 42. Plan of David's Tower with the addition made later.

that it is that side of the tower nearest the well which has been found most demolished, while that part of the tower furthest from the well still exists to a height of nearly 50 feet above the original rock surface against the south side of the tower. It is difficult to realise, now that the Half-Moon Battery entirely covers up the remains of the tower, that so much of it still exists.

Perhaps the clearest way to indicate the extent of the tower which

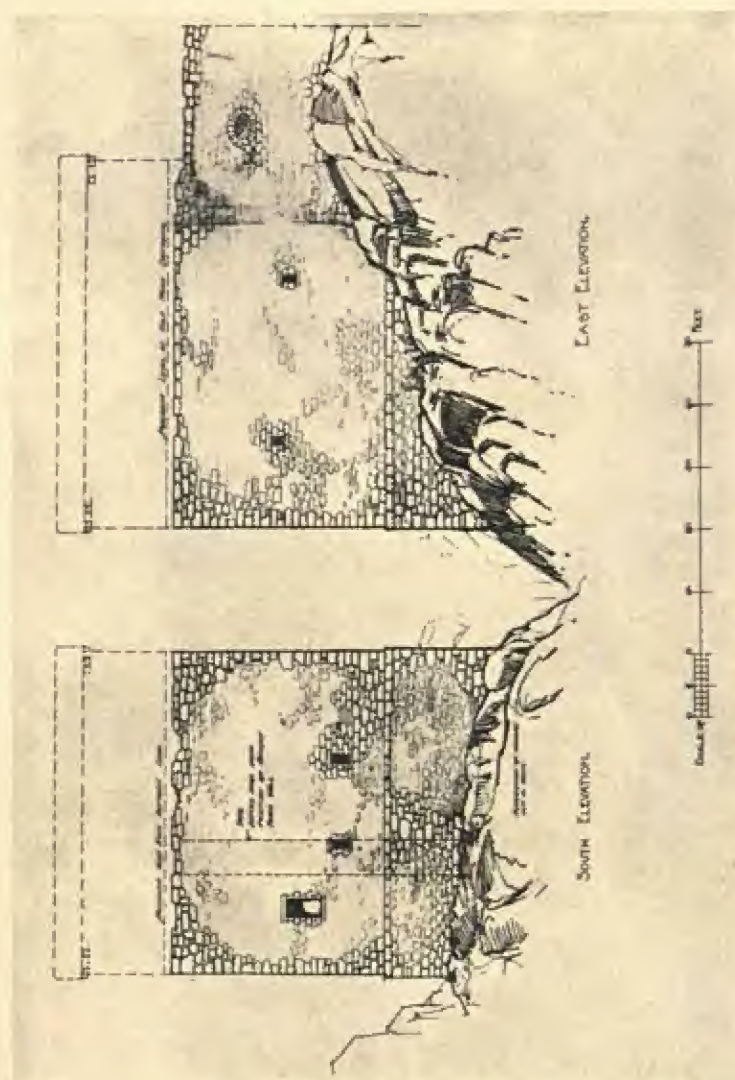


Fig. 43. View of the south and east elevations of David's Tower.

still remains is to show a view of the south and east elevations drawn to scale from actual measurements (fig. 43). Now that the actually existing remains of David's Tower have furnished a solid groundwork, it is to an architect a tempting subject for further studies of conjectural restoration. This is, however, neither the time nor the place to pursue the matter in that direction, but it is hoped that in future years other workers may be so fortunate in their researches that still more interesting discoveries may be made to illustrate and elucidate the chequered history of this ancient castle, so long the fortress, and still the pride, of our beautiful city.

It should, I think, be stated that the cost of this work of excavation and research, like much of similar character during recent years, has been borne upon the votes administered by the First Commissioner of Works.

MONDAY, 9th March 1914.

PROFESSOR THOMAS H. BRYCE, M.D., Vice-President,
in the Chair.

A Ballot having been taken, the following were duly elected Fellows :—

The Hon. THOMAS COCHRANE, Crawford Priory, Springfield, Fife.

PAUL GOBY, 5 Boulevard Victor Hugo, Grasse, Alpes Maritimes, France.

The following Donations to the Museum and Library were exhibited, and thanks voted to the Donors :—

1. By W. BALFOUR STEWART, F.S.A. Scot.

From the prehistoric dwelling at Skerrabrae, Skail, Orkney.—
Polished Stone Ball of Basalt, $2\frac{3}{8}$ inches in diameter, incised with

linear patterns ; Saw of Slaty Stone, 10½ inches in length, with one edge regularly serrated ; Elongated Scoop of Bone, 6 inches in length ; Scapula of an Ox, worn at the end by use ; Small Fragment of a Perforated Stone Hammer.

[See the subsequent paper by Mr W. Balfour Stewart.]

2. By W. MOIR BRYCE, F.S.A. Scot., the Author.

St Margaret of Scotland and her Chapel in the Castle of Edinburgh. Sm. 4to. Edinburgh, 1914.

3. By THOMAS JOHNSON WESTROPP, the Author.

Reprint from the Proceedings of the Royal Irish Academy, vol. xxxii., Section C, No. 6. Fortified Headlands and Castles on the South Coast of Munster, Pt. I. 8vo. Dublin, 1914.

4. By THE LORDS COMMISSIONERS OF H.M. TREASURY.

Accounts of the Lord High Treasurer of Scotland, vol. x., A.D. 1551-1559. Edited by Sir James Balfour Paul, C.V.O., LL.D., F.S.A. Scot., Lord Lyon King of Arms. 8vo. Edinburgh, 1913.

5. By HERBERT B. MACKINTOSH, F.S.A. Scot., the Author.

Elgin Past and Present : a Historical Guide. 8vo. Elgin, 1914.

6. By JOHN ALEXANDER INGLIS, F.S.A. Scot., the Author.

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The following Communications were read :—

I.

NOTE UPON CARN NAN BHARRAICH, OR CAIRN OF THE MEN OF BARRA, A BURIAL MOUND OF THE VIKING TIME ON THE ISLAND OF ORONSAY, ARGYLLSHIRE, WITH AN OUTLINE OF THE POLITICAL HISTORY OF THE WESTERN ISLES DURING THE LATTER HALF OF THE NINTH CENTURY. By SYMINGTON GRIEVE, F.S.A. Scot.

In August 1881, while I was carrying on the excavations at Caisteal nan Gilleann, Oronsay, the late Sir John Carstairs M'Neill, V.C., Proprietor of Colonsay and Oronsay, came to see how the work was proceeding. In answer to his inquiries I mentioned to him several other places upon the islands which might be worth investigating. One of these was a mound quite near, which seemed to differ from the others, which were all known by the name of Sithean (pronounced Shean). The particular mound was known to the natives by the name of Carn nan Bharraich, or the Cairn of the Men of Barra. Sir John inquired of me if I could give any explanation of the name, and I told him I could not, but I suggested it might be the remains of a large cairn erected to mark the spot where some Barra men were buried, judging from the local name.

I have no doubt that from that time Sir John kept his eye upon the mound, but it was not until nearly ten years had elapsed that any excavations took place. I have been told that early in 1891 Sir Malcolm M'Neill, who was then resident in Colonsay, again drew the attention of his brother, Sir John Carstairs M'Neill, V.C., to Carn nan Bharraich. This resulted in an examination of the mound being begun on 15th April 1891, as related by Sir Malcolm M'Neill in the *Proceedings* of this Society, 11th May 1891 (vol. xxv. p. 432).

The discoveries were important, and one of the brooches found

unique. The articles are now in the National Museum of Antiquities, and the collection consists of nine objects, undoubtedly belonging to the Viking period, and two others which may have found their way into the mound by chance. The following is a list :—

Carn nan Bharraich, containing :—

1. Oblong Brooch, 3 inches in length by $\frac{1}{2}$ -inch in breadth. It is of bronze, and unique.
2. Portion of a Bronze Penannular Brooch of Celtic form, $1\frac{1}{2}$ inches in diameter.
3. Portion of a small oval Bronze Ring, $\frac{7}{8}$ -inch in diameter.
4. Bead of Serpentine, a naturally formed and flattened ovoid pebble, 1 inch in greatest length, $\frac{5}{8}$ -inch in breadth, and $\frac{1}{2}$ -inch in thickness, with a small hole for suspension perforated through the centre.
5. Bead of Amber of dark red colour, $1\frac{1}{2}$ inches in diameter, the perforation being fully $\frac{1}{2}$ -inch in diameter.
6. Iron Knife-Blade, 7 inches in total length.
7. Six portions of thin Bronze, much corrugated, as if by the action of fire.
8. A quantity of Iron Rivets or Clinker Nails, varying from $1\frac{1}{4}$ inches to about 1 inch in the length of the shank.
9. Stone Sinker, an irregularly, wedge-shaped pebble of steatite. It measures $4\frac{1}{2}$ inches in greatest length, by $2\frac{1}{2}$ inches in breadth, and $1\frac{1}{2}$ inches in thickness.
10. Small Finial of Turned Bone, resembling the finials on the whalebone ribs of an old umbrella. May have been a recent introduction to the mound, but uncertain.
11. Two Flint Chips. May have no connection with the Viking burial.

The excavations at a depth of 4 feet below the surface exposed two skeletons at full length with the feet pointing about S.S.E. They seemed to be the remains of a male and female, and, from the objects associated with their burial, were judged to have been persons of importance. From the rivets found, and the thin portions of bronze appearing to have been subjected to fire, they had evidently had a boat burial, of which there has been more than one discovered in Colonsay and Islay.

The excavations carried on by Sir John Carstairs M'Neill, V.C., on 17th April 1891 consisted of the cutting of two trenches down to what seemed the true ground level. The first of these passed through

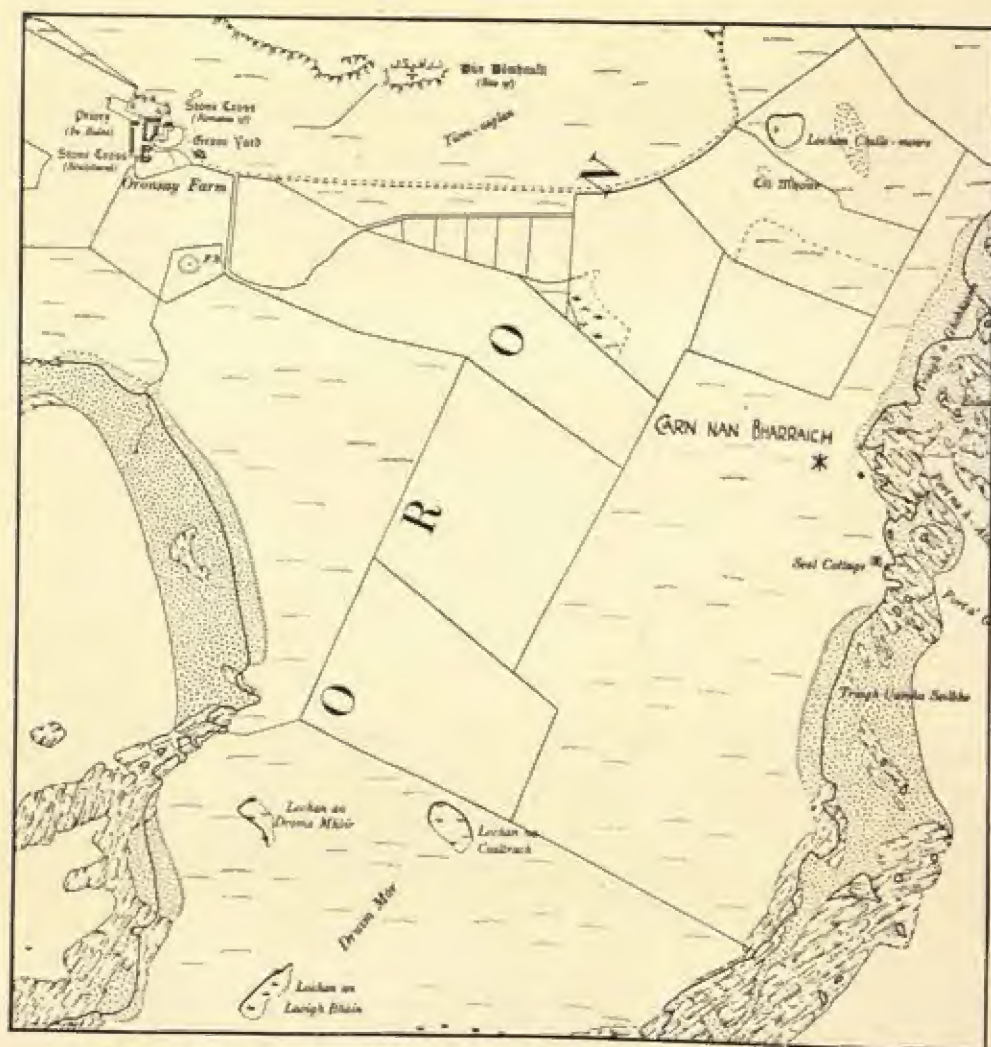


Fig. 1. Showing position of Carn nan Bharraich, from Ordnance Map of Oronsay.

clean sand and was unproductive, but the second exposed the two skeletons. On the following day a third trench was dug, which passed through a considerable amount of charcoal containing boat rivets, some pieces of bronze, and a stone sinker. Although Sir Malcolm M'Neill in his paper does not mention it, I guess from a remark he makes that the trenches were begun at the west side of the mound and cut in an easterly direction right through the summit, the third trench not having been continued beyond the centre of the mound. The south and north portions of Carn nan Bharraich thus escaped examination. They are still to a large extent unexplored, and it is quite possible that other discoveries than those I have now to record may yet be made.

On the 23rd May 1913 Mr Neil (Ban) M'Neill, the farmer on Oronsay, was passing Carn nan Bharraich, when he observed a skull, partly exposed, lying in the sand. The skull was reclining with its frontal aspect towards the east and its crown towards the south, the upper portion of the left side being exposed. Mr M'Neill began prodding the sand with his walking-stick, and immediately brought to the surface the two brooches and the pin, and the bone object with a hole through it which may be a whistle or an ornament of some kind. If it had been made out of solid bone it might have served the purpose of a Japanese Netsuke, but its being made out of a bird bone makes this doubtful.

I happened to arrive in Colonsay the day of this discovery, and in a day or two afterwards I heard that a find had taken place on Oronsay. I immediately went over and saw Mr M'Neill, who was kind enough to exhibit what he had found, and offered to present one of the brooches to me. Knowing the interest attached to the various objects, I suggested he should allow me to hand over the collection to this Society for the National Museum, if I could arrange that they would be permanently placed on public exhibition. To these conditions the finder agreed, and I told him I would like to visit the ground

where the discovery was made, and make a more careful examination along with himself.

As a friend had arrived at Colonsay with his yacht, we sailed to Oronsay on the 6th June, and, having called on Mr M'Neill, he went with us to the mound, taking a spade to do a little digging. Mr M'Neill had reinterred the skull at the place where he found it, so we began digging there. We at once saw from the original position of the skull and the place shown to us where the brooches and pin were found, that, if it had remained undisturbed since its original burial, the body must have been placed lying with the head to the south and the feet to the north. We found the area that had been excavated in 1891 still bare sand, intermixed with broken slabs of stone. The wind had blown out the sand so as to form a hollow from 12 to 15 inches in depth, and at the sides of this circular area the wind had gradually blown away the thin coating of turf all round the space originally excavated, forming arms or projections of sand into the existing grass land. The bare sand in these projections was about 12 inches below the grassy surface adjoining. The whole appearance of the central portion of the Carn nan Bharraich is now that of a star-shaped area of sand cut out of the turf, as shown in the sketch plan (fig. 2), on which the inner circle shows the portion of the carn examined by Sir John Carstairs M'Neill, V.C., in 1891. The outer circle marks approximately the extent of the whole carn. The area between the two circles shows, in white, the spaces from which the turf has been broken away. The dark spaces show where the grass is still growing. The upper portion of a skeleton shown in the south-eastern part of the sketch plan indicates the position of that found in May 1913 by Mr Neil (Ban) M'Neill, farmer on Oronsay. X marks where the brooches, pin, and other objects were found, 23rd May 1913. Xs shows the place where the shears were found, 6th June 1913. F stands for female, and M stands for male. The scale of the plan is about one-eighth of an inch to a foot.

From what is to be seen at present it is difficult to say exactly what has been the diameter of the mound originally, but I think it was probably from 35 to 40 feet.

Digging northwards from the skull we found some of the bones of the upper part of the trunk, and also of the arms, and, on the right side

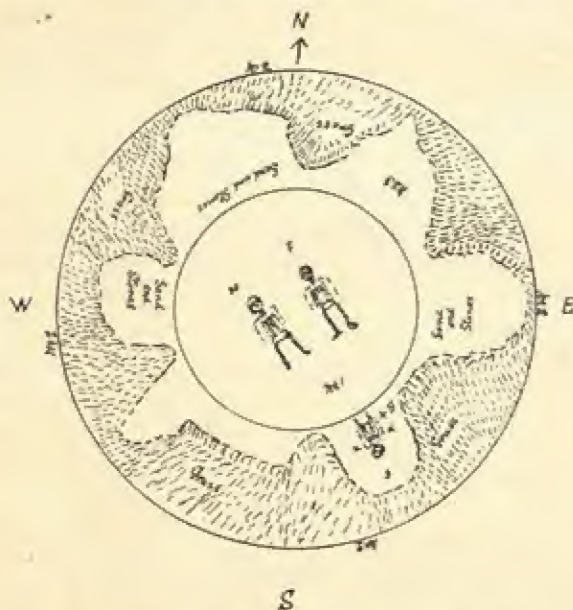


Fig. 2. Sketch Plan of Carn nan Bharraich, Oronsay.

of the skeleton, the iron shears, which are of special interest in connection with this discovery. As far as I have been able to ascertain, it is the first instance of such an implement having been found in Scotland in connection with a Viking burial. In Norway, however, similar shears have occurred in connection with burials of the same kind.

Having found the upper part of the skeleton, our excavations

failed to discover the lower portion; and the only conclusion we could come to was that as that portion of the body would be lying in the area excavated in 1891, it must have been unsuspectingly removed at that time.

It may be that the bones found by Sir John Carstairs M'Neill, V.C., and identified as those of a female, belong to the body recently discovered, which, from the articles associated with it, seems to have been that of a woman, and in all probability a person of position. The skull seemed to be unusually large for one of the gentler sex, and, judging from the size of the other bones, must have belonged to a person with a head rather out of proportion to the rest of the body. The upper part of the skull, although in good condition, showed no visible sutures, which appeared rather remarkable, but may perhaps indicate a person of considerable age. The teeth were in good condition, but well worn, as if the possessor had lived on gritty or nitrogenous food, and the impression given me was that they had belonged to someone who was beyond middle life. After examination I carefully reinterred the remains at the place at which they were found.

The objects that were associated with the burial are of considerable artistic merit, and to some extent unique. Mr James Curle has kindly described these in the paper following this, so I need say nothing more upon that branch of the subject, except that the brooches belong to an early period—probably the eighth or ninth century. They have been well worn, as the state of some of the ornamentation indicates, and they are probably objects that have decorated the females of more than one generation. So it is pretty certain this burial took place in the latter half of the ninth century, or perhaps the beginning of the century following.

There is, however, a good deal of interest attached to the consideration of the period to which they probably belong, as it was a time of much warfare and trouble in Scotland, Ireland, and adjacent Isles.

The political position was peculiar, and it is difficult to untangle the causes that led to the national complications that arose at that time.

It was probably between the years 830 and 930 A.D. that the persons who were interred at Carn nan Bharraich died.

The burial of persons wearing pagan ornaments, on Oronsay, which had for at least between one and two centuries prior to this time been a sanctuary of the early Celtic Church, is worthy of notice. The mound is situated some distance from the Christian Cemetery, but is within the sanctuary. The question naturally arises, were the persons buried in the mound converts to Christianity who still adhered to some of their heathen customs, as so many of the Norsemen did at that time of religious transition? Or was the power of the Christian community on Oronsay so weak as to be unable to prevent a pagan burial taking place within the bounds of its sanctuary?

An outstanding figure at that period was King Harald Fairhair of Norway. There is an interesting story regarding the way in which he got his name. He made a visit to Earl Rognwald of More, whether as a welcome or unwelcome guest is not clear, but in any case the Earl is said to have combed, and afterwards cut King Harald's hair. For some reason, which may have been that he had taken a vow, it had not been cut previously for ten years, and his appearance had become so uncouth that he was called Shockhead. The Earl was so surprised at the abundance and beauty of the King's hair, and the change that its removal made upon his appearance, that he gave him the name of Fairhair, by which he was ever afterwards known.

The chronology of the Icelandic sagas is contradictory as to the date at which King Harald Fairhair invaded the Western Isles, but it is probable the correct period is 852-853, or very near that time. We can with some assurance arrive at this opinion from what we know of other events that took place in the latter half of the ninth century.

One account says it was about the year 880 that King Harald

Fairhair first took measures to punish and bring into subjection the Vikings and others who had fled from Norway and taken refuge in the Western Isles of Scotland, but this date is evidently a mistake.

Some of these men had been outlawed owing to the raids they had made upon the territory of King Harald in Norway. Others were chiefs and men who had possessed extensive lands in their own country, and who, when they refused to become subject to the rule of Harald, had to flee abroad. Having made homes for themselves in the Isles and built strongholds, they made these the base of their operations.

Each summer they raided the coasts of the land of their birth, generally trying to punish those who had been placed to manage their lands for King Harald. It became, therefore, necessary to protect his Norwegian subjects, and to do so, the recalcitrant chiefs and Vikings had to be brought under his authority. There are several accounts of how this was accomplished, but the version that has hitherto been generally accepted is as follows:—

About the year 880 King Harald Fairhair sent one of his chiefs named Ketil Flatneb or Flatnose as his lieutenant to the Western Isles. With ships and men and ample resources supplied by Harald, Ketil Flatneb was successful in his mission, and soon conquered the Hebrides. He probably made Colonsay his centre of government, and, having established himself securely, as he thought, threw off his allegiance to King Harald, and declared himself King of the Isles. When the news of this event reached Norway, Harald made up his mind that he would visit the Hebrides himself the following summer, and bring the islanders under subjection. Starting upon his expedition, he went south through the Isles, conquering everywhere, and sailed as far south as Anglesea and Man. Returning to Norway, he spent the winter, but the following summer he appears to have returned once more to the Western Isles, where, we are told, he "rooted out the Vikings of the West." At this time there appears to have been an influx of settlers to the Isles from Norway, who were

men who held views in accordance with those of King Harald, and who had become accustomed to his supreme authority and were loyal in their allegiance.

If we accept this story, it is evident some reconciliation must have taken place between King Harald and King Ketil Flatneb, as the latter seems to have continued to rule in the Isles, probably agreeing to pay seat or tribute to the King of Norway.

The late Sir George Webbe Dasent, D.C.L., accepted this version of the story in his Introduction to the *Saga of Burnt Njal*. There is, however, a difficulty which is not explained, and that is, how did the reconciliation come about with King Harald by which King Ketil Flatneb was allowed to continue his rule in the Western Isles? From what we know of the history of the doings of King Harald, it seems most unlikely that he would forgive King Ketil Flatneb for breaking his allegiance and refusing to pay tribute.

The version of these events, as told in the *Saga of King Olaf Tryggvason*, Northern Library, vol. i. pp. 166-167, seems more likely to be correct, as there it is narrated that King Harald Fairhair, having gone more than one expedition to the Western Isles of Scotland, "rooting out the Vikings and outlaws wherever he went," returned home to Norway. He then sent Ketil Flatneb, who was unwilling to go, to rule over the Isles for him, giving him ample supplies of men and ships.

Ketil soon brought the islands under subjection, and then, some time later, throwing off his allegiance to King Harald Fairhair, he declared himself King of the Isles. He appears after this to have reigned and exercised his authority in the Hebrides without question until his death, and no mention is made of any attack upon him by King Harald.

The seat of his rule was most likely on Colonsay, as for centuries previous to that time that island had been the place from which, during the rule of the Celtic kings and chiefs, who were the pro-

genitors of the lords of the Isles, the government had been carried on of the Southern Isles. We have also good reason to believe that, for at least one period, the north of Ireland was governed from Colonsay, and possibly at other times parts of the mainland of the west of Scotland.

When Ketil Flatneb sailed from Norway he must have been a man approaching fifty years of age. He took with him his wife Ynghild, his grown-up son Helgi Biola, and his daughters Aud the deep-minded, and Thorun Horn. He left behind him, in charge of his Norwegian estates, his eldest son Biorn, who later became known as Biorn the Easterling, from his adhering to the pagan faith.

Ketil and his family all became Christians and were baptised in the West, with the exception of Biorn. When Biorn arrived in the Isles, after having to flee from Norway, he found his father, King Ketil, dead, and his brother and sisters Christians. This made him sad and sorry, as he regretted their change of religion.

He stayed with his sister Aud, and her son Thorstein, for two winters. He then sailed to Iceland, where he took up land at Breidafirth, and dwelt at Biarnarhaven. When he died he was buried at Borgarbrook in a cairn according to heathen custom (see the *Saga of King Olaf Tryggvason*, Northern Library, vol. i. p. 167; also the *Story of the Ere Dwellers (Eyrbyggja Saga)*, p. 10).

Ketil formed an alliance with Amlaf (otherwise known as Olaf the White), King of Dublin, and gave him in marriage his famous daughter Aud, the deeply wealthy, or some say the translation should read "deeply minded." The issue of this marriage was Thorstein the Red, whom, as her only child, Aud dearly loved. He, as far as we know, must have been brought up in Dublin, where he and his mother remained until about the time of his father's death. When that event happened, Aud and her son fled to the Sudreys, or Southern Hebrides, where they would be under the protection of Ketil Flatneb. There is little doubt they went to Colonsay. Thorstein married

Thurid, the daughter of Eywind, surnamed East-man. She was the sister of Helgi the Lean, who married Thorun Horn, Ketil Flatneb's daughter, and aunt of Thorstein.

Thorstein and Thurid had one son and five daughters. The son was named Olaf Feilan and was the youngest of the children. The names of Thorstein's daughters were Groa, Osk or Olivi, Thorhild, Thorgerd, and Wigdis.

Thorstein became a warrior king, and undertook a joint expedition with Earl Sigurd the Great, son of Eystein Rattle. Their victorious army conquered Caithness, Sutherland, Ross, Moray, and more than half Scotland, over which Thorstein ruled for one year.

After his father King Amlaf lost his life in battle in Ireland (see *Saga of King Olaf Tryggvason*, p. 167), his widow Aud went with her son, and was with him during his invasion and reign in Scotland, and from that time onwards devoted herself to the upbringing of his family. We do not know whether Thorstein had become a widower by this time, but, when he was killed and his followers dispersed, Aud hid herself and her grandchildren in a wood. There, under her direction, a few of her late son's followers cut down timber and built a merchant ship in which they all escaped to Orkney. From there they got a vessel to take them to the Southern Isles, and there seems little doubt they took up their abode once more in Colonsay.

There they lived for some years, but the Celtic element in the population beginning to assert its ascendancy, Aud determined about 892, or more likely some years later, to sail for Iceland, where her two brothers had already settled. The account given in the *Saga of King Olaf Tryggvason*, Northern Library, vol. i. p. 168, says that Aud and her grandchildren went direct from Orkney to Iceland, visiting the Faroe Isles on the way, and spent some time there. The probability, however, seems to be that Aud, after leaving Orkney, returned to the Sudreys for a time.

The Laxdale saga says, Aud (whose name is given as Unn in mistake)

went to Iceland in the year 895 A.D. It was probably in the early summer of that year she left the Sudreys, as we know Aud arrived in Iceland at the beginning of winter, where her ship was wrecked. Aud had called at Orkney on the way north, where she gave away her granddaughter Groa in marriage. She also broke her voyage at the Faroes, where Olof or Ost, another of her granddaughters, was married, so there would be some delay in reaching the shores of Iceland.

The impression made on Norse history by Aud was very great, as references to her occur in so many of the sagas. She was a grand old dame who tenderly looked after the best interests of her grandchildren, as became a good Christian. She lived in troublous times, when the life of no man or woman was secure, but she piloted her ship through all the shoals of life, and, when the end came, she died when her descendants and pagan relatives had assembled for the feast at the marriage of her grandson and heir, Olaf Feilan. She died as she had lived, a Christian, and no dry land in pagan and unconsecrated Iceland was good enough for her burial. She left instructions that her body was to be interred below high-water mark upon the shore, and her wishes were carried out.

Aud had settled at Hvammsfirth in Iceland, and called her estate Hvamm. She probably died during the years 915-920 A.D., although the author of the *Saga of Burnt Njal*, in the Introduction, suggests the period 908-910 as the time of the death of Aud; but that date seems too early to fit in with the correct chronology.

That Aud was intimately acquainted with the leading people of Barra is evident, for when her grandson Olaf Feilan, son of Thorstein the Red, consulted her as to whom he should marry, she told him to obtain Aldis, a Barra woman, the daughter of Konal, son of Steinmod, son of Olivi child's-friend. This marriage took place, as I have mentioned, about the period 915-920 A.D. The *Landnamabok* also takes notice of this event, Book ii., chap. xv., *Origines Islandices*,

vol. i. p. 83. It says, "Anlaf-feilan, son of Thor-stan the Red, married in Iceland Al-dis the Barry woman (Barra in the Hebrides). She was the daughter of Conal, the son of Stan-mod, the son of Aulive Bairn-Carle. The children of An-laf and Al-dis were Thor-gelle and Thora. Thor-gelle married Hrodny, the daughter of Mid-frith Scæg. They had a son Ey-wolf the Grey. He married and had a son, Thor-Kell, who was great-grandfather to Ari the historian."

The date at which Ketil first went to the Sudreys as viceroy is more likely to have been about 855, instead of 880, as we know that Aud was unmarried when her father went to the West. It was probably early in the period when he established himself as viceroy in the Isles that Ketil gave his daughter Aud to Amlaf, King of Dublin, in marriage. We know that intimate relations were maintained between Aud and her relatives in the Southern Isles; also that her son Thorstein the Red married the sister of his uncle by marriage, namely Helgi the Lean, and that there were five daughters and one son by this marriage. Also that the eldest of Thorstein's daughters was married in Orkney not very long after her father was slain at Oykel, on the boundary between Ross and Sutherland, that date being about the year 891. It seems more than probable from these facts that Icelandic chronology in this instance is not quite correct. It is also probable that it was only towards the end of his life that Ketil Flatneb declared himself King of the Isles and threw off his allegiance to King Harald Fairhair, and it is quite likely the date 880 is not far wrong as regards this event. There is little doubt that it was not long after Ketil declared his independence that King Harald seized his estates in Norway and compelled Ketil's eldest son Biorn the Easterling to take to flight. It took him about a year to reach Colonsay, when he found his father had died (see the *Saga of the Ere Dwellers*, chap. v. p. 10).

When we examine this evidence by comparison with statements from Celtic sources of information, we find that Amlaf, who was also

known as Olaf the White, became King of Dublin in 852. The annals of Ulster tell us that in 856 there was a great war between the Gentiles and Malsechnaill, along with the Gallgaidhel of Munster. In the year following (857), a victory is recorded by Imair and Amlaiph, otherwise Olaf the White, against Caittel Finn with the Gallgaidhel—that is, against Ketil Flatneb and the Scotch and Irish Vikings he had brought under his authority. It may have been upon the conclusion of peace after this defeat that Aud, the daughter of Ketil, was given in marriage to Amlaf to cement friendship between the chiefs. But Aud was not the only wife of Amlaf, as he also married a daughter of Kenneth MacAlpin, the Pictish King of Scotland, as mentioned in *The Fragments of Irish Annals*, p. 172; *Chron. of Picts and Scots*, p. 405. Kenneth began to reign in 832, and died in 860. It may have been over the Pictish succession that war ensued, as we find that in 866 Amlaebh and Imar went to Fortrenn with the Galls of Erin and Alban, and ravaged all Cruithentuath, and carried off hostages. In other words, invaded Scotland as far as Forfarshire, taking hostages.

Out of this circumstance trouble evidently arose, as it was against the Picts that Thorstein directed his attacks when he invaded the north of Scotland and conquered the northern portion of the country. The Picts, having been defeated, and no doubt fearing further losses, were glad to make peace with Thorstein, thereby getting time to intrigue and bring about his murder. It was during the campaign just mentioned that Earl Siguard killed Maelbrigd and cut off his head, hanging it to the crupper of his saddle. Maelbrigd had a projecting tooth, which scratched the leg of Sigurd as he rode along. The wound was poisoned from the tooth, and Sigurd died. He was buried at Ekkialsbakki, at the estuary of the river Oykel, where he was hoylaid, that is, buried in a how, named Siwardhoch or Siward's How, now known as Cyder Hall, *Orkneyinga Saga* (1873), Intro., xxiii.

We do not know the exact date of the death of Amlaf. The annals

of Ulster mention him as alive in 871, as in that year Amlaiph and Imhar returned from Alban with two hundred ships and a great body of men—Angles, Britons, and Picts—in captivity. This is the last notice I have been able to find regarding Amlaiph, and he was probably killed shortly after this time.

According to the Pictish chronicle, Thorstein the Red, son of Amlaiph, is said to have ruled over the northern half of Scotland for only one year, and the annals of Ulster state that in 875 he was treacherously slain by the people of Alban. That this date is a mistake seems probable, as, if correct, we would have to antedate the marriage of Amlaf to Aud by some years.

Besides, if we are correct in supposing Thorstein to have been born about 858, it seems impossible he could have died, the father of six of a family by one wife, in 875. We know from other sources that these warrior kings sometimes began their careers when mere boys, and the wonder is that even high birth inspired their followers with confidence in them.

It is, however, more likely that 891, the date given in the saga, is about the correct year of the death of Thorstein, and that in this instance the annals of Ulster are wrong.

When we return to a consideration of the causes which created the trouble that led to the attacks of King Amlaf and his son Thorstein upon the Pictish kings of Scotland, we find that it was probably in connection with the succession to the throne. Kenneth MacAlpin was Scottish by his father's side, but his mother was a Piet, and there is no doubt that as the succession among the Picts was on the female side, King Amlaf, on the death of Kenneth MacAlpin, believed he had certain rights in the succession, through his wife, the daughter of Kenneth. This rule of succession was directly opposed to that which prevailed among the Scots, who followed the laws of tanistry; and we are aware that as soon as the Scots got possession of the Pictish kingdom, they made every effort that the law of tanistry should prevail.

It was this conflict in the views regarding the succession which probably led to the invasions of Scotland by Amlaf and later by his son Thorstein.

Kenneth MacAlpin began to reign in 832, and died 860 A.D. He was succeeded by his brother Donald MacAlpin, who reigned about four years, dying about 864. Constantine, the son of Kenneth, now came to the throne and ruled for fourteen years—others say sixteen years. It was in 866 and 867 that Amlaf, King of Dublin, raided Pictavia, at which time Constantine was king. He was succeeded by his brother Aedh or Hugh, who had reigned only one year, when he was killed by his own people. These four kings were all Scots by race, but in the Irish annals are termed *Reges Pictorum*.

This succession to the Pictish throne was contrary to the Pictish regulation as to females succeeding. The people therefore made Eocha, son of Run the King of the Strathclyde Britons, king, as his mother was a daughter of Kenneth MacAlpin. They also associated with him Grig, or, as the Irish called him, Ciric, son of Donald or Dungal, the king who succeeded his brother Kenneth MacAlpin. It was probably at this period, when some dispute had arisen about the succession, that Thorstein made claim to become King of the Picts by his supposed rights through his father Amlaf, who had a daughter of Kenneth MacAlpin as one of his wives.

We are informed in the *Saga of Olaf Tryggvason*, p. 165, that Orlyg, the son of Rapp, brother of King Ketil Flatneb, was brought up in the Sudreys or Southern Hebrides as foster son of Bishop Patrick. Orlyg pled with Patrick to supply him with a plenarium and the necessary consecrated articles of equipment, and also wood with which he could build and furnish a church, which he proposed to erect in Iceland. After some delay, and on making certain promises to the Bishop, Orlyg went to Iceland and built his church.

The followers of these Norse chiefs seem to have been mostly of that mixed race named the Gallgaidhel. They, like most other mixed

racés, appear to have developed the worst qualities of each, and, wherever they went, were feared for the outrages and cruelties they perpetrated upon those that they attacked. They seem to have been fearless, but proved terrible and remorseless foes.

When the so-called Celtic element in later times became paramount, they had a large strain of Norse blood in their veins, and their chiefs were sometimes, as in the case of Somerled, as much Norse as Celtic. Possibly by that time some of the more vicious principles in their natures had become toned down, but we know it did not take much to arouse their violent passions, and that they engaged in internecine war.

On the night of the Epiphany, 1156 A.D., a great sea fight took place off Oronsay between Godred, King of the Northern Hebrides (which included Barra), and who was at the same time King of the Isle of Man, and Somerled, who was his brother-in-law, and was Thane of Argyll.

Somerled was living, in all probability, at Dun Evan, Colonsay, at this time, and had a fleet of eighty ships. The "outlook" on Cnoc na faire, Scalasaig, would announce the appearance of Godred's expected fleet. As soon as night fell, Somerled, with his ships, sailed out from Loch Staosonaig and Scalasaig Bay, and, steering south, met Godred's fleet when between Isla and Oronsay. A fierce fight ensued, in which neither party seems to have obtained much of a victory, but many were killed on both sides. Somerled evidently got the best of the contest, for Godred made a treaty with him, confirming him in the possession of Kintyre and the islands south of the Point of Ardnamurchan.

Many of those killed must have been buried on Oronsay, and, knowing that men from Barra were engaged in this fight, I was at first inclined to think that the cairn had been erected over the bodies of the men from that island. The evidence of the objects recovered, however, all points to a period about three centuries earlier. If the

burial had been that of warriors who were on a purely fighting expedition, it seems unlikely that any female remains would be found associated with such an interment.

Before and also long after the ninth and tenth centuries, Barra appears to have been the centre from which the islands north of the Point of Ardnamurchan were ruled; while Colonsay occupied the same position in connection with the Hebridean Islands south of Ardnamurchan—the Isle of Man having at times also an independent administration.

It has even been thought that the Clan Neil of Barra owe their name to a Norwegian named Nicolas, the abbreviation of that name being Neil in the Norse. This was the opinion of Johnstone, the translator of the *Anecdotes of Olave the Black*, as he mentions at p. 28 of his notes.

When the Hebrides and Man were under one rule, as happened in the time of Somerled, and probably both before and after his reign, then Colonsay became the place from which the rulers ruled the whole of the islands from the Butt of Lewis to the Calf of Man, along with certain portions of the adjoining mainland of Scotland.

At other times Barra seems to have been the seat of government in the Northern Isles or Nordereys, while Colonsay was the centre of the administration of the Southern Isles or Sudreys.

At the present time the greater portion of the Colonsay families have the blood of the chiefs of the Clan Neil of Barra in their veins, and claim descent from Iain a Chuain (John of the Ocean), who was a son of the Chief of Barra. He was born while his mother was in a boat on a voyage to Colonsay. A very remarkable and interesting story is told in connection with this event, but it is too long to narrate here.

That there were intimate relations between Colonsay and the people of Barra for many centuries is undoubted, if we are to trust to oral tradition and also notices in the sagas and other sources of

information. Who the persons were who were buried in Carn nan Bharraich, Oronsay, we do not know; but we may feel assured they were persons of importance belonging to Barra, who met their death at Oronsay, that so celebrated were they, either from the circumstances of their deaths or their position in life, that their names were associated with the cairn in which they were buried.

What was the story of their lives may never be known, but that it made a great impression at the time and for generations afterwards seems certain, or the name of the mound in which they were buried would not have been handed down the centuries by oral tradition as Carn nan Bharraich.

PROBABLE APPROXIMATE DATES OF EVENTS MENTIONED
IN THE FOREGOING NOTE.

	A.D.
<i>Kenneth MacAlpin</i> reigns	832 to 860.
<i>Amlaf, King of Dublin</i> , reigns	852 until after 871.
<i>Aud</i> , probably married about	857.
„ became a widow about	873.
„ arrived in Iceland about	898.
„ died between the years	915 and 920.
<i>Ketil Flatneb</i> came to the Isles about	855.
„ „ died King of the Sudreys about	884.
<i>Thorstein the Red</i> , son of <i>Amlaf</i> , King of Dublin, and <i>Aud</i> , daughter of King <i>Ketil Flatneb</i> , was probably born about	858.
<i>Thorstein the Red</i> , married about	879.
„ „ killed about	891.
<i>Grou</i> , eldest daughter of <i>Thorstein the Red</i> , married in Orkney about	897.
<i>Olaf Feilan</i> , son of <i>Thorstein the Red</i> , and his youngest child, married about	915.
<i>Biorn the Easterling</i> , eldest son of King <i>Ketil</i> <i>Flatneb</i> , settles in Iceland after staying two years with his sister <i>Aud</i> and her son <i>Thorstein</i> in the Sudreys	886.

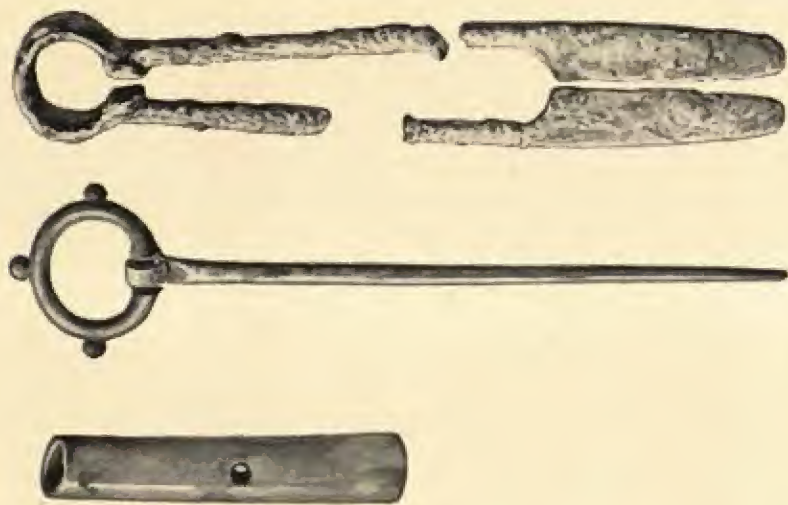
II.

ON RECENT SCANDINAVIAN GRAVE-FINDS FROM THE ISLAND OF ORONSAY, AND FROM REAY, CAITHNESS, WITH NOTES ON THE DEVELOPMENT AND CHRONOLOGY OF THE OVAL BROOCH OF THE VIKING TIME. BY JAMES CURLE, F.S.A. SCOT.

Forty years have passed since Dr Joseph Anderson reviewed, in a paper published in our *Proceedings*, the relics of the Viking period of the Northmen then known to have been found in Scotland. Since then Dr Anderson has contributed more than one notice of discoveries of remains dating from the Viking time, notably the finds made at Ballinaby, Islay, in 1878, and our archæological material has sensibly increased. The past year has brought to the Museum a very valuable addition to the collection of relics of this period, in two grave-finds—the first of these from Carn nan Bharrich, Isle of Oronsay, the second from Reay, Caithness.

The circumstances attending the discovery of the Oronsay grave have been fully dealt with in the preceding paper by Mr Symington Grieve, and need not be repeated here.

The grave was obviously that of a woman. It contained a pair of iron shears, 11 inches in length (fig. 1); a bronze pin with a moveable ring head, on which there are three small projecting bosses, the whole $5\frac{1}{2}$ inches long (fig. 2); a small hollow cylindrical object of bone, $2\frac{3}{4}$ inches long (fig. 3)—a small hole perforating it at a point equidistant from the ends, may suggest a whistle, but it is not improbable that it belongs to the class of things known as dress-fasteners; and lastly, a pair of single-scaled oval brooches of bronze, or more probably brass (fig. 4)—ornaments which at once tell us that the burial belonged to the Viking time.



Figs. 1, 2, 3, 4. From a Viking Grave in Oronsay.

The brooches measure $2\frac{3}{8}$ inches in length by $2\frac{1}{8}$ inches in breadth. Each brooch is formed by a single casting. The pins, which were of iron, are now so corroded that it is impossible to see how they were fastened to the brooch, but probably they were hinged to double plates forming part of the casting. The rusted mass which surrounds them bears very clearly the impress of the cloth to which they were originally affixed, and on each pin can be traced the outline of a knotted cord, indicating that, when in use, the brooches had been connected together. The brooches themselves are quite similar in design. They have the usual domed outline; along the longest axis of the brooch runs a raised band tapering at either end, and ornamented in the centre with a form of *svastica*. On either side of this central band three projecting bosses of more or less circular form rise from the surface. The bosses are surrounded at their base by treble raised lines, reproducing the effect of wire or metal cord, and all three are connected together by a broader band of the same wire decoration running parallel to the central band. It is obvious that the brooch has been copied from an earlier type in which the bosses were composed of separate pieces of metal or some other substance affixed to the surface, and surrounded by cords of silver wire. The spaces between the bosses and those at each end of the brooch are filled with animal forms in relief. The margin of the brooch is surrounded by a band of well-defined rope moulding. The animal forms which fill the lower spaces in the field are those of quadrupeds, each having a head with pointed ears, a long snout, and a body contorted and writhing as in violent motion. At either end of the brooch a pair of these beasts is placed *affrontée*. Each animal in the design grasps with his claws either a portion of his own body or that of his neighbour. Such animal forms are very characteristic in Northern ornament of a certain period, and represent one of those ornamental motives which Scandinavian metal-workers evolved from provincial Roman art. Their source has been traced to the repre-

sentations of animals, more especially of lions, to be found in the manuscripts and decorative art of the Carovingian period.

The second grave-find came to light in September last at Reay, Caithness. The burial was discovered through the wind blowing aside the loose sand upon the links, and thus exposing a human skull, of which the back portion lay uppermost. The depth at which it was found was some four feet below the present surface level. No signs of a cist were discovered, and the bones, which were few in number, were simply those of an unburnt body which appeared to have been laid in the sand possibly in a doubled-up position.

Upon the body at the time of burial had been laid a pair of oval brooches, which were found at a depth of one foot below the skull, and appeared to have been placed together face to face (figs. 5 and 6). Near them lay the much-corroded remains of a bridle-bit of iron, a bronze pin and buckle (figs. 7 and 8), and a spindle-whorl of stone (fig. 9). With these relics we may associate an iron buckle and a small cross of the same metal (fig. 10), which shortly after the unearthing of the skeleton were picked up within a radius of two or three yards from the grave by the Rev. W. Carmichael, minister of the parish, who kindly made over his find to the National Museum. It seems probable that both of these had been thrown on the surface with the sand in digging out the grave.

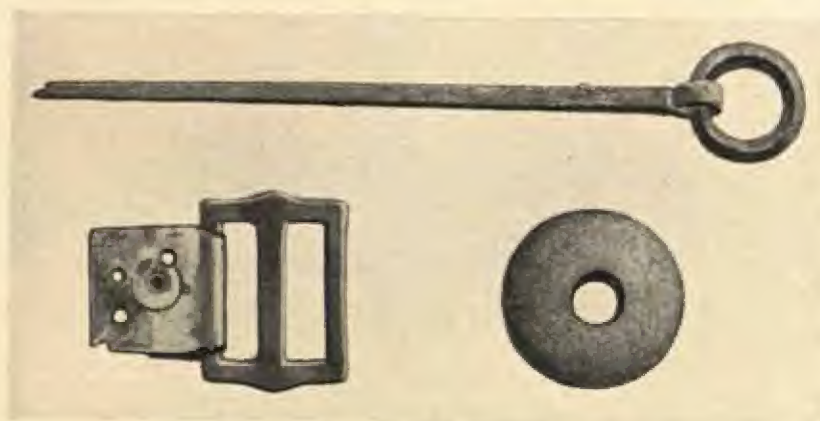
The bronze pin measures $4\frac{1}{2}$ inches in length, and is furnished with a moveable ring on the head. The buckle is of a square undecorated type, and has still attached to it a small piece of the metal mounting by which it was attached to a leather belt or strap. The little cross measures $1\frac{1}{2}$ inches in length, and is of somewhat unusual construction. It is composed of a single thin strip of iron. The head is formed by doubling the strip over a ring and bringing the ends together; by a further doubling of the metal composing the sides the arms of the cross are contrived. It is an interesting object, but it is not



Figs. 5, 6. Two Brooches from a Viking Grave in Reay (†).

necessary to regard it as a Christian symbol : indeed, it is not impossible that it formed part of the bridle-bit.

The brooches, which are double-scaled, measure $4\frac{3}{8}$ inches in length and $3\frac{1}{8}$ inches in breadth. The pins are of iron. Projecting from the surface of each brooch are five conical bosses forming part of the upper scale, each boss being perforated with four holes. One boss is placed on the highest or central point of the brooch. The other four are to be seen on the edge of the upper scale, one at each side, one at each



Figs. 7, 8, 9. From a Viking Grave in Reay, Caithness.

end. On the sides equidistant between these bosses are four flat circular panels, each perforated in the centre with a hole, forming the settings to which were attached hemispherical projections probably formed of lead plated with silver or some other metallic substance. Through one of the holes in these settings there still projects a short metal tang affixed to the lower scale, upon which the projection was affixed (fig. 6). Round the base of these silvered bosses must have run a triple cord of silver wire, of which portions still remain on one of the brooches, running along a sunk channel in the decorative framework which attaches each of the projections to the central boss ; and

no doubt the wire also served to bind together the upper and the lower scales of the brooch, passing through small holes which are pierced in the base at either side and either end. Debased animal forms fill the space between the bosses, and are also to be seen on the panels on the lower scale. The brooches show a very slight difference in the treatment of the animal ornament on the upper panels, and in one of them the bosses show no terminal bead. This brooch, which typologically is the earlier, was probably an old ornament



Fig. 10. Small Cross of Iron (†).

when it was deposited in the grave, as at one end the lower scale has been repaired by riveting upon its lower surface a plate of silver.

In these finds from Oronsay and Reay we have to deal with two pairs of brooches both belonging to a well-known group, but showing a distinct difference in decoration, which indicates that the burials with which they were associated were separated by some considerable period of time. We know that in the evolution of this type of ornament the brooch composed of a single plate of metal preceded the type in which, with a view to heightening the ornamental relief, the upper part was cast separately and affixed to the brooch proper, and is in consequence known as the double-scaled variety. The Reay brooches,

which exhibit this feature, are therefore the later type; the Oronsay brooches are the earlier.

I do not find in our *Proceedings* any attempt either to arrange typologically the brooches of the Viking time found in Scotland, or to deal with their chronology. The number of examples found here is as yet comparatively small. Dr Anderson, writing in 1879, gave the total number of oval brooches recorded as having been found in Scotland before that date as thirty-two. The finds made in recent years bring the numbers to not less than forty-one.

In Scandinavia, from whence they come, a very large number of such brooches have been found. Over a thousand have come to light in Sweden alone. They are very common in Norway. In Denmark and the Baltic Islands they are less numerous.

It is obvious that such an abundance of material could not fail to attract Northern archaeologists, and to their studies, notably to those of Professor Oscar Montelius, who has done so much for the chronology of the antiquities of his country, we owe it that the evolution of the oval brooches has been worked out.

I propose, with the help of these Scandinavian studies, to show the gradual process by which such ornaments as those before us were gradually evolved, and to deal with the chronology of those found in Scotland.

It is not difficult to find parallels to the Oronsay brooches in Scandinavia, but in our own country we have so far only a single pair which is closely related to them. These brooches were found in a grave at Clibberswick, in the island of Unst, Shetland (fig. 11).¹ Each brooch measures 4 inches in length by 2½ inches in breadth, and is single-scaled. In common with the Oronsay brooches we have the raised band running along the longer axis of the brooch, and the three bosses disposed at regular intervals on either side. The bosses themselves have disappeared, but we can note the flat surfaces on which

¹ *Proceedings of the Society of Antiquaries of Scotland*, vol. xvii. p. 17.

they stood, and the remains of the tangs by which they were fastened. Lastly, we have a neatly executed band of rope moulding surrounding the brooch on its margin. Instead of the Carlovingian ornament, we find occupying the space between the bosses six projecting animal figures of a well-known Scandinavian type, of which we have examples on similar brooches in Norway, and which is often to be found on some of the larger round fibulæ from the island of Gotland; a seventh figure more debased than the others occupying the apex of the brooch.



Fig. 11. Brooch from a Viking Grave in Unst, Shetland (8).

With these brooches was found a trefoil-shaped brooch of bronze. The front is covered with Carlovingian animal ornament, the back is tinned. This brooch is in much better preservation than the larger ornaments, and is possibly somewhat later in date.

We shall see from an examination of the Scandinavian finds that these brooches all belong to a distinct group. In Schleswig-Holstein,¹ in Denmark,² in Norway,³ and in Sweden⁴ we find parallel

¹ Mestorf, *Vorgeschichtliche Alterthümer aus Schleswig-Holstein*, fig. 749.

² Muller, *Ordning af Danmarks Oldsager*, fig. 596.

³ Rygh, *Norske Oldsager*, fig. 644.

⁴ Montelius, *Antiquités Suedoises*, fig. 552.

examples, all reproducing more or less distinctly the flat central band, the six bosses, the Carolingian ornament, and the rope moulding.

Let us trace the origin of this type in Scandinavia. The prototype of our series is to be found in an oval brooch (fig. 12) comparatively small in size, formed from a single piece of metal without any decoration. In some examples, a rib very slightly raised divides the surface into two equal portions. The pin is hinged by being flattened out at one end and the portion so flattened doubled over a single small plate



Fig. 12. Brooches from Uppland and the Island of Öland, Sweden (†).

attached to the inside of the brooch, and kept in its place by means of a small piece of wire which passes through the head and the socket, thus forming a hinge. Such brooches are not uncommon in the island of Öland, and are also found on the mainland in Southern Sweden and Norway. They date from the earlier part of the seventh century. Dating from about the same period, we find both in Öland and Bornholm a number of fibulae which take the shape of a bird or animal treated in a more or less conventional fashion. Among these is a type reproducing the form of a lizard-like animal, which no doubt at some earlier stage was copied from some quite natural representation, the product of Roman, or at least Southern, art. The late Dr

Knut Stjerna, in a recent study of these ornaments,¹ illustrates as an early example of this form a lizard-like quadruped from the bottom of the Gundestrup cauldron; a vessel which illustrates the treatment in Gaulish hands of motives still clearly retaining the stamp of their classical origin. This animal form, which is not uncommon in Bornholm, seems to have been taken towards the latter part of

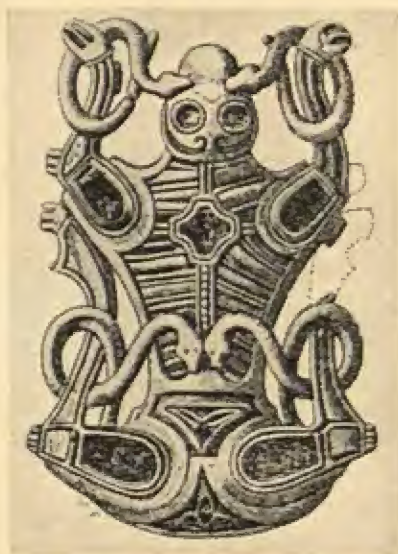


Fig. 13. Brooch from Lousgård, Bornholm (†).

the seventh century to ornament the oval brooches, and some traces of its outline still linger in our finds from Oronsay.

In fig. 13 we have an example of this creature in a bronze fibula from Lousgård, Bornholm.² It is obviously not an early type, as the design is becoming very conventional, and figures of snakes have twined themselves round the limbs. But the shape of the animal is still quite

¹ Stjerna, "Bornholms befolkning under järnåldern," *Antikvarisk Tidskrift för Sverige*, vol. xviii. p. 148, fig. 39.

² Vedel, *Bornholms oldtidsminder og oldsønger*, p. 414, fig. 404.

distinct and its long legs with strongly marked quarters, its large round eyes, its somewhat conventional backbone, and the outline of its ribs are specially to be noted.

In our next example, a brooch from the Swedish province of Småland (fig. 14),¹ we have the same animal, combined, at a rather later stage of its history, with the simple small oval fibula. Certainly



Fig. 14. Brooch from Småland, Sweden (†).

the beast has lost something of its individuality, and tends to become a purely decorative pattern; but we can still trace the legs, the quarters, the round eyes, the flat plate marking the line of the backbone, and the ribs which unite with it.

It would be easy to give examples of the various stages through which this animal form passed until its identity was finally lost in the ornamental details which were superadded to it; but these we may pass over and proceed to examine another Swedish find, from a

¹ Stjerna, *op. cit.*, p. 196, fig. 135.

grave excavated in 1876 on the island of Björkö, on Lake Malar,¹ which brings us to a period not very far distant from that in which our Oronsay brooches were fashioned.

In this grave on Björkö, an unburnt body, doubtless of a woman, had been laid in an oak coffin. Little or no trace of the bones remained,



Fig. 15. Brooch from the Island of Björkö, Sweden (1).

but lying in a position indicating that they had been laid on the breast were two oval brooches, connected together with a thick chain of silver wire. Beside these lay a smaller highly decorated brooch, a pair of shears, a silver needle-case, the remains of a knife, and at one end of the grave a drinking-glass with a tapering stem.

The oval brooches, one of which is illustrated in fig. 15, are single-scaled, ornamented with a long horizontal raised band inlaid with

¹ Stolpe, "Meddelanden från Björkö," *Månadsblad*, vol. ix. p. 32.

silver and niello, on which we see four square projections to which are affixed animal figures of circular form. A similar projection appears on the middle of each side. In addition to these there are on each side of the midrib three round projections, to which were fixed hemispherical bosses of lead plated with silver and surrounded at the base by a ring of plaited silver wire.

In these brooches from Björkö we still find three features which are derived from the earlier animal form. In the broad, flat ridge running along the back we have the traces of its backbone. In the two larger bosses on either side of this ridge we have the traces of its quarters. Lastly, in the two smaller bosses which are placed almost on the margin we have its eyes, still retaining the relative position of these features in the animal form.

The relation between the Björkö find and those from Oronsay and Clibberswick is obvious. In our Scottish examples the traces of the original animal form are a stage nearer extinction. The outline of the back is still to be seen, but the bosses on either side are now disposed symmetrically, and the distinction in the spacing of eyes and fore-quarters has disappeared. Typologically our examples are a little later than those found in the Björkö grave, but the points of resemblance are so many that we can class them all as of common Scandinavian origin, and as being separated by no great period of time. The investigation of the Björkö cemeteries enables us approximately to date the group.

To Birka, the little town which stood upon this island in the Malar Lake, St Anschar brought Christianity in the year A.D. 820, and the single-scaled brooches have been found in some of the earliest graves of the Christian period.¹ One pair similar to those described was found with a Byzantine coin of Theophilus (A.D. 829-842),² but, as

¹ Montelius, "Öfversigt öfver den nordiska forntidens perioder," *Svenska fornminnesföreningens Tidskrift*, vol. viii. p. 157.

² Arne, "Sveriges förbindelser med Östen under vikingatiden," *Fornvännen*, 1911, p. 4.

Professor Montelius points out, such brooches were frequently well-worn ornaments when they were buried with the women who wore them, and the type is generally attributed to the first half of the ninth century.

We have so far in Scotland no other brooches which belong to the series I have dealt with. The most of the examples we possess owe their peculiar decoration to a parallel development which I shall now endeavour to trace.

At the same period in which we find the simple undecorated oval fibula which formed the prototype of our series, we find another



Fig. 16. Brooch from Öland, Sweden ({}).

brooch precisely similar in its general outline, but with a design consisting of a series of dots surrounded by incised concentric rings. An example from Öland is shown in fig. 16. These circles are usually disposed, one in the centre and three at either end, in such a way that if a line be drawn connecting them together the surface of the brooch would be divided into two diamond-shaped figures. As the brooch grows larger, the incised ornaments gradually become projections increasing in number from seven to ten, and lines are introduced connecting them together, while the intervening spaces are filled in with animal forms. A good example of this stage is to be seen in another brooch from Öland (fig. 17), in which the projections have taken the shape of quatrefoils, and the animal ornament, which

is still subservient to the general design, is confined to panels slightly lower than the general surface.¹

In the next stage the bosses are ten in number, and of simple hemispherical shape. As in the last figure, the groundwork of the design consists in lacing the bosses together so as to form a geometrical figure, through which debased animal forms, recognisable from the limbs and hands which grasp one another, wind in inextricable confusion. Fig. 18, which belongs to this class, was found in the



Fig. 17. Brooch from Öland (†).

Swedish province of Uppland, and is assigned by Professor Montelius to the latter part of the eighth century. From this point we can follow the evolution of the brooch by means of examples found in Scotland, and it is interesting to put beside this specimen from Sweden one belonging to a pair found in 1895 at Ardvouray, in the island of Barra, the Hebrides, now in the British Museum (fig. 19). A comparison of these specimens would prove, if proof were necessary, the Scandinavian origin of such ornaments, so closely do the designs resemble one another. The Ardvouray brooches were found in

¹ Stjerna, *op. cit.*, fig. 141.

September 1862 by Commander Edge, R.N., while engaged in surveying the Hebrides.¹ The grave in which they lay appears to have contained a human skeleton, together with a sword, remains of a shield, portions of buckles, a whetstone, and a comb of boxwood.

During the past year a third example of the type of brooch found at Ardvouray has been brought to the National Museum, having



Fig. 18. Brooch from Uppland, Sweden ({}).

been discovered in the island of Sanday, Orkney. It is unfortunately in very poor condition.

In our next stage, which I shall term the Pierowall type, from the place of find (fig. 20), the brooch is still cast in a single piece, with the exception of the projecting bosses, which were evidently of some other material. Where these have entirely disappeared, as in a specimen in our collection, the short projecting pins to which they were affixed clearly indicate their position. In this type the number

¹ *Proceedings of the Society of Antiquaries of London*, 2nd series, vol. ii. p. 229



Fig. 19. Brooch from the Island of Barra (†).

of bosses varies from seven to nine, and they are usually connected together by raised bands with somewhat debased animal ornament in the sunk panels on the upper part and sides of the brooch.

The example of this type in the possession of the National Museum was found about 1851 in a series of graves excavated in the links of Pierowall, Westray, Orkney,¹ a find of peculiar interest, because associated with it was a Celtic penannular brooch, also preserved in the same collection. Altogether, three pairs of brooches seem to have



Fig. 20. Brooch from Pierowall, Orkney (§).

been found in the course of this excavation, all of which, according to Dr Anderson, appear to have been of single-sealed construction.

The other recorded finds of brooches belonging to this class are :— (1) A single example found in 1861 in the island of Unst, Shetland, now in the National Museum. It closely resembles the Pierowall example, though the relief is less sharp. A single boss on either side is cast as part of the brooch, and shows a rudely executed human head. (2) A pair of brooches found in a grave at Newton, Islay.² These are a

¹ Anderson, "Notes on the Relics of the Viking Period of the Northmen in Scotland," *Proceedings of the Society of Antiquaries of Scotland*, vol. x. p. 552.

² *Proceedings of the Society of Antiquaries of Scotland*, vol. xiv. p. 71.

little coarser in execution than the Pierowall brooch. Professor Montelius dates the brooches of this class as belonging to about A.D. 800 and the beginning of the ninth century,¹ the same period to which I would refer the Oronsay brooches.

A pair of brooches of the same class have been found in a grave at Tuna, in the parish of Alsike, Sweden, with nine Arab coins dating from the period A.D. 706-785.²

With these examples we leave behind us the single-scaled brooches. The later brooches are double-scaled, except perhaps the latest stage of all, not so far represented in Scotland, in which we find the type reverting to a very poorly executed single-scaled brooch, with debased ornament.

Our next stage in the development of the brooch might be styled the Ballinaby type, from the finely preserved pair of brooches found in 1878 in a grave at Ballinaby, Islay, and described by Dr Anderson,³ one of the few Scottish finds from the Viking period in which the entire grave goods have been carefully preserved and described.

The Ballinaby brooches, one of which is illustrated in figure 21, are the only examples of their class in Scotland. They differ very little in design from the preceding class, except that the whole of the ornamentation, which in the earlier brooch appears in relief, is here cast separately and stands out from the lower scale, which forms a gilded background. The two scales were kept together by threads of twisted silver, and the nine bosses of plated lead or some other material were affixed to the upper scale. The pins are of bronze, and are provided with a form of spring.

Brooches showing little or no variation from the pair found at

¹ Montelius, "Öfversigt öfver den nordiska forntidens perioder," *Svenska förrminnesföreningens Tidskrift*, Band viii. p. 157.

² Almgren, "Vikingatidsgrafvar i Sagån vid Sala," *Fornvännen*, 1907, p. 18, note.

³ *Proceedings of the Society of Antiquaries of Scotland*, vol. xiv. p. 51.

Ballinaby have been discovered at Björkö, where they are assigned to the middle of the ninth century. The following dated finds of this type are quoted by Professor Montelius:—¹

A brooch from Salum, Torsåkers parish, Ångermanland, Sweden, was found buried with two silver coins of Louis the Pious (814-840).

In a grave at Söndre Bø in Sigdal, Norway, two brooches of the same type were found with seven silver coins, of which one was English,



Fig. 21. Brooch from Ballinaby, Islay (†).

having been struck for Coenwulf of Mercia (796-819) and six were Frankish (one struck for Charlemagne and five for Louis the Pious).

In a grave at Björkö two such brooches were found, with a Byzantine coin of the Emperor Theophilus (829-842).

The next stage of development is represented by such brooches as the pair from Caithness (figs. 5 and 6 above), which we may term, from the place of find, the Reay type. Like the brooches from Ballinaby, they are double-scaled, but the upper scale does not so completely envelop the lower scale, of which there is visible not only the more or less flattened edging, but also a band of debased animal

¹ Montelius, *op. cit.*, p. 158.

decoration surrounding the brooch. On the upper scale, and forming part of its casting, are at least five hollow conical bosses, each perforated by four holes. Some examples of these brooches show slight ornamental projections on the rim. To this type belongs the greater number of the Viking brooches found in Scotland.

In addition to the Reay brooches, we may note, as belonging to the same group, a pair found in 1788, also at Ballinaby, Islay,¹ now in the National Museum; a pair of brooches found in 1872 in Tiree,² of which one specimen was presented to the National Museum; a pair found in 1840, at Longhills near Wick, Caithness,³ also in the National Museum—this pair is slightly dissimilar in pattern; a pair found in the neighbourhood of the Broch of Lamaness, island of Sanday, Orkney, one of which is illustrated in our *Proceedings*, the place of find not being given.⁴ Professor Montelius assigns this type to the end of the ninth and the first half of the tenth century. He states that at Björkö such brooches were found by Dr Stolpe, with coins dating from the beginning of the tenth century, while a pair found in a grave at Gårdby in Öland was associated with an Arab coin minted for the Emperor Theophilus A.D. 908-9, which had been worn as an ornament.

A worn pair of such brooches, which were thus probably old possessions when they were buried, were found near Smolensk, in Russia, with silver ornaments and Oriental coins, of which the latest was struck in the year 953.⁵

Many brooches of this type come to light in Iceland, where they cannot have been buried before the last quarter of the ninth century. On the other hand, Professor Montelius notes that the type in ques-

¹ Anderson, *Notes on the Relics of the Viking Period*, p. 534.

² *Ibid.*, p. 560.

³ *Ibid.*, p. 551.

⁴ Charleson, "Notice of some Ancient Burials in Orkney," *Proceedings of the Society of Antiquaries of Scotland*, vol. xxxviii. p. 559.

⁵ Montelius, *op. cit.*, p. 160.

tion, as well as the one which follows it, is very rare in Denmark and in certain southern parts of the Scandinavian peninsula—an indication, without doubt, that in these districts Christianity came earlier, and with its coming the custom of laying ornaments and similar possessions in graves passed away.

The final stage in the evolution of these brooches, as far as our finds go in Scotland, is to be seen in a pair found in 1786 at Castle-



Fig. 22. Brooch from Castletown, Caithness (†).

town, in Caithness (fig. 22). They lay in a grave which had been dug in a green mound which had accumulated above the remains of a broch. One of the pair is now in the Royal Northern Museum at Copenhagen, the other is in our national collection.

In this brooch, which may be styled the Castletown type, we note slight ornamental excrescences on the rim, three on either side; but the most striking change is to be seen in the treatment of the five projecting bosses forming part of the upper scale. The central of these has become larger and shows four lateral projections, while the remaining four have assumed an animal form. The type is

undoubtedly developed from the one we have just dealt with. In Sweden it is dated as belonging to the last half of the tenth century. Professor Montelius cites a find from Haugen in Jarlsberg and Larvik amt, Norway. The brooches had been placed back to back, and in the inside lay, among other things, two whole and one half Arabic coins, very worn, but sufficiently legible to make it possible to determine that the latest in date was struck in the year A.D. 910.

In Scandinavia the series ends in the first half of the eleventh century, in a brooch formed from a single casting, which is obviously a debased copy of the preceding type, but such ornaments have not so far been met with in Scotland, and we are unable to illustrate from finds in this country the gradual process by which the oval brooch grew coarser and heavier, until it fell out of use.

The Society of Antiquaries is indebted to the Royal Academy of History and Antiquities, Stockholm, for permission to use the blocks figs. 12, 13, 14, 15, 16, 17, and 18.

III.

ACCOUNT OF THE EXCAVATION OF TWO BRONZE-AGE CAIRNS IN THE PARISH OF FOULDEN; AND OF THE DISCOVERY OF A CIST CONTAINING A FOOD-VESSEL URN, AND FRAGMENTS OF A BEAKER, AT EDINGTON MILL, CHIRNSIDE, BOTH IN THE COUNTY OF BERWICK. BY J. HEWAT CRAW, F.S.A. Scot.

Early in November 1913 my attention was drawn by Mr R. Kinghorn, Foulden Moorpark, to a low, grass-grown, stony mound which was situated in a fir plantation called The Hagg, in the parish of Foulden, Berwickshire.

The position was on a prominent knoll, almost 450 feet above sea-level, and some 530 yards north-west of Foulden Hagg cottages. A wide view over the Merse extends to the south; to the north, after a slight fall, the ground rises some 20 feet to a height called the Freestone Hill. It has been suggested, with some probability (the geological formation being Silurian), that this name may have been derived from the sandstone covers of cists having been ploughed up here. Flint implements have been found much more plentifully on this hill than on adjoining fields.

The proprietor of the land, Major J. B. Wilkie-Dalyell of Foulden, readily granted permission for the opening of the cairn, and also gave assistance to my men in carrying out the work. After consultation with Mr A. O. Curle, excavation was begun on 5th November. The stones and earth of which the cairn was constructed were thrown back beyond its boundaries; the subsoil was laid bare in order to reveal the presence of any forced soil; any large stones set on end or in line were left in position, and the work was completed on 11th November.

The original periphery of the cairn was found to be marked by a ring of boulders mostly set on end, leaning slightly inwards; the ring measured $31\frac{1}{2}$ feet east and west, by 28 feet north and south. Outside this ring the stones were mostly small, and placed with no

regularity; they had probably originally formed part of the cairn, becoming displaced later. There was no evidence of a surrounding trench. The height of the cairn at the centre was 3 feet above the original surface of the knoll. Fig. 1 shows the positions of the four cairns, and fig. 2 gives a plan and section of cairn No. 1.



Fig. 1. Showing positions of the Cairns.

Within the outer ring, at the west side of cairn No. 1, a second wall ran in crescent form from the north side of the cairn to the south, being at its middle point 4 feet distant from the outer ring, and running gradually into it at either end. This wall, some 2 feet in width, consisted for most of its course of a double line of boulders set on end, leaning towards its interior, which was filled with smaller stones also set on end.

To the east of this crescent wall, 7 feet from its middle point, 4 feet 3 inches from its north point of junction with the outer ring,

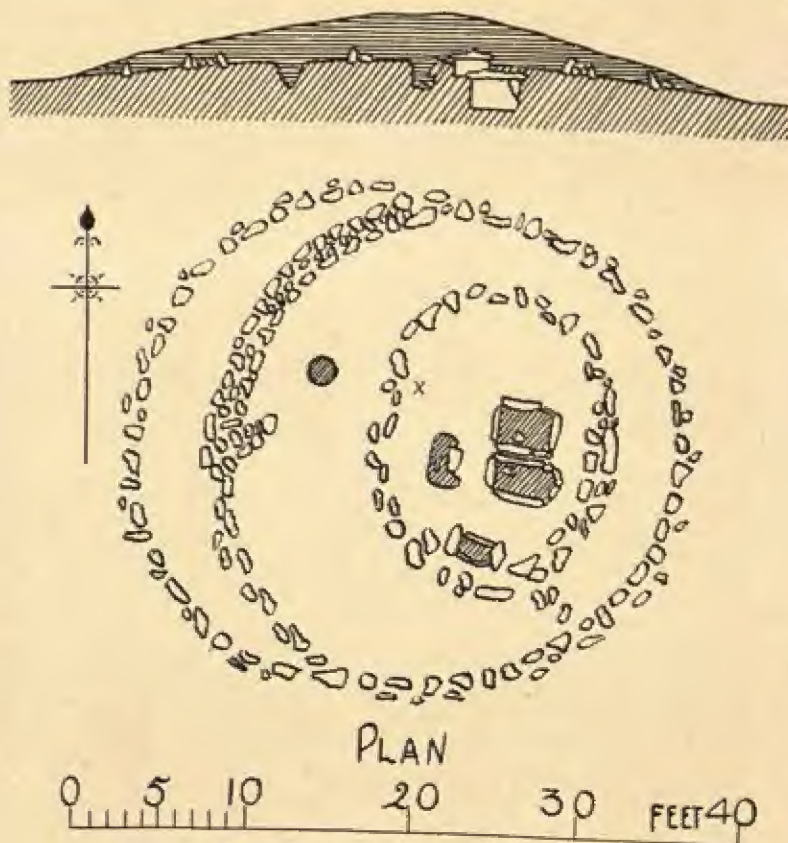


Fig. 2. Plan and Section of No. 1 Cairn at Foulden.

8 feet 3 inches from its south point of junction, and 3 feet 6 inches from the outer ring to the east, lay an inner ring of boulders 16 feet 3 inches north and south, and 11 feet 6 inches east and west. The boulders were mostly set on end, leaning slightly inwards, and like those of

the outer ring were of an average size of about 1 foot 9 inches by 8 inches, the largest measuring 2 feet 10 inches by 1 foot 3 inches.

Within this inner ring, 2 feet from its east side, lay two cists, with their sides touching and their long axes almost due east and west. The north cist measured 3 feet 4 inches by 2 feet 1 inch, and was 1 foot 10 inches deep. The sides were formed of sandstone slabs set upright, horizontal slabs being placed on the top of these where required to equalise their height. The corners were packed, where necessary, with smaller stones, and a large flag, 4 feet 6 inches by 3 feet by 6 inches, served as a cover. This cover had probably been some 6 inches below the original surface of the ground. The bottom was unpaved, consisting of the red, sandy subsoil of the knoll. The interior of the cist was almost filled with soil, which was duly sifted. An urn of the food-vessel type was found lying on its side near the south side of the cist. Near the west end were found four flint implements. Fragments of oak-wood charcoal, and a number of human bones were also found. The bones were incompletely incinerated, and had belonged to an individual of adult age; they had been placed indiscriminately in the various parts of the cist.

The south cist, the bottom of which was 9 inches above that of the north cist, measured 3 feet 9 inches by 1 foot 10 inches. Its depth was 1 foot 8 inches, and it had no covering slab, the top of its sides being on a level with the top of the cover of the north cist. Several small slabs had been laid horizontally as paving round the cist, at the level of its top, a feature which was also observed in the case of the north cist. This cist also was unpaved. The soil which filled the cist contained an urn of the food-vessel type lying on its side in the north-west corner; a flint knife and a small fragment of flint were found near the centre, and several fragments of oak charcoal were present. No bones or teeth were found.

Close to the inner ring of boulders, at its south side, and 2 feet 8 inches from the south cist, lay a small cist at a somewhat higher

level, part of its side slabs having apparently been above the original level of the ground. It measured 2 feet 2 inches by 1 foot 1 inch, and was 1 foot 1 inch deep. The cover measured $2\frac{1}{2}$ feet by $1\frac{1}{2}$ feet by 8 inches, and the bottom was unpaved. As this cist was rifled during the temporary cessation of the work, the knowledge of its contents is lost; on sifting, the soil yielded a small fragment of charcoal.

It would seem that the primary interment of the cairn was made in the north cist, which is deepest and occupies the most central position. The south cist, though secondary, was designedly placed in close relationship to it, the similarity of surface paving suggesting no great diversity of date. The small cist, being shallower than the south cist, must also be secondary, the cairn having to be excavated for its construction; there is some evidence that the boulders of the inner ring were moved somewhat to make room for it.

Two feet west of the south cist, and at right angles to it, lay a cist-like pit without slabs. It contained forced soil, the lower stratum of which upon examination proved to be rich in organic matter. The pit measured 3 feet 2 inches by 1 foot 7 inches, and was 1 foot 6 inches deep; a sandstone slab lay sloping into it on its east side, and a smaller slab lay in the bottom. Near the middle lay a human femur, much decayed; and at the south end, where the pit extended a few inches further to the east, remains of charcoal were found, among which were easily distinguishable the stems of heather, which is still to be seen growing in the vicinity; oak was also present.

Midway between the inner ring and the crescent wall, and almost in a line with the north side of the north cist, was found a circular cup-shaped pit, 1 foot 6 inches deep and 1 foot 6 inches in diameter at the top. Beneath forced soil, charcoal remains were found, chiefly of oak, and two halves of hazel-nuts, one of which still retained the kernel. Similar pits are mentioned by Canon Greenwell as being found in the wold barrows of Yorkshire, and in the long barrows of the south-west of England (*British Barrows*, p. 9), but he remarks their

absence in the North Riding and in Northumberland. These pits were generally circular about $1\frac{1}{2}$ feet deep, and the same in diameter; as many as four or five have been found in a single barrow. In most cases they merely contained forced soil, but sometimes bones, charcoal, potsherds, etc., were present. He supposed them to have been receptacles for food, but remarks their not having been usually placed in close contact with the body.



Fig. 3. Urn from the North Cist in Cairn No. 1.

At the spot marked on the plan with a X, within the inner ring, was picked up on the original surface of the ground a finely preserved axe-hammer (fig. 5.)

The urn from the north cist (fig. 3) is made of a yellowish-red clay. The dimensions are as follows:—height, 6 inches; circumference at lip, $19\frac{1}{2}$ inches; circumference at moulding, 20 inches; diameter at top, $6\frac{1}{2}$ inches; diameter at base, 3 inches; thickness at lip, $\frac{9}{32}$ -inch; thickness at base, 1 inch. The interior of the lip does not project, but is ornamented for a width of $\frac{1}{8}$ -inch with two rows of oblique

ribbed impressions $\frac{1}{2}$ -inch in length. The upper part of the exterior has five rows of the same ornamentation, the lowest row being placed beneath a projecting moulding which encircles the urn, $1\frac{1}{4}$ inch from the top. The obliquity of the impressions here and on the lip is reversed in alternate rows. The lower portion of the urn, which is contracted in a graceful curve to a slight plinth $\frac{1}{2}$ -inch in height, is marked with oblique cord impressions widely and somewhat irregularly placed.



Fig. 4. Urn from the South Cist in Cairn No. 1.

The urn from the south cist (fig. 4) is made of redder clay than that used for the urn from the north cist. Its height is $5\frac{3}{8}$ inches; circumference at lip, 21 inches; circumference at widest part, $20\frac{1}{2}$ inches; diameter at lip, $6\frac{7}{8}$ inches; diameter at base, $2\frac{7}{8}$ inches; width of lip, $\frac{7}{8}$ -inch; thickness at base, $1\frac{1}{8}$ inch. The interior is much blackened. The lip, which projects prominently both externally and internally, is bevelled inwards very slightly. It is ornamented by a row of circular impressions; the hollow bone or other instrument with which these have been made seems to have been notched. This row has on either side of it a herring-bone ornament of a small pattern. Another line of

herring-bone passes round the outer edge of the lip. The exterior is divided into three zones by two mouldings, the upper of which is placed $1\frac{1}{2}$ inch from the lip and $1\frac{1}{8}$ inch above the lower moulding. The upper zone contains four horizontal rows of herring-bones similar to those on the lip; the inner two are interrupted at intervals of some 2 inches

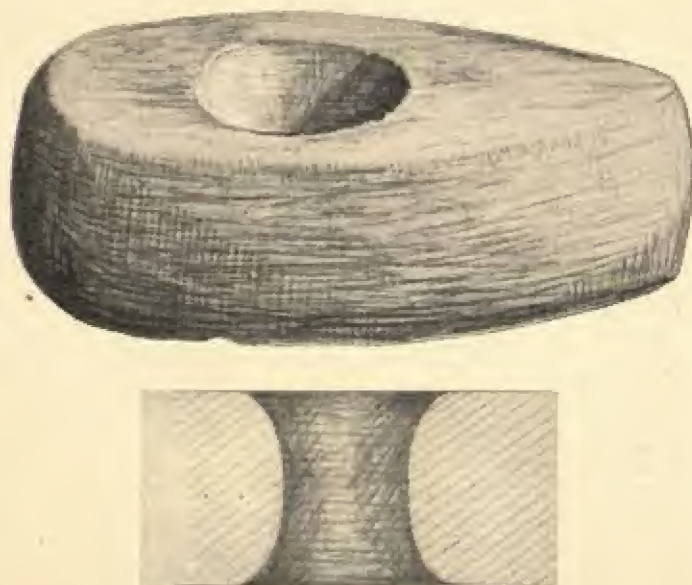


Fig. 5. Axe-Hammer of Greenstone found in Cairn No. 1.

by two similar rows placed vertically. The middle zone contains three of these rows, horizontal, broken at four places by vertical rows. The lower zone contains, beneath a horizontal row adjoining the moulding, six vertical bands, each of which consists of three vertical rows of herring-bones, similar to those on the other portions of the urn. This part contracts abruptly, and there is little or no plinth. The faint lines of two thumb impressions can be traced on the lower zone.

The axe-hammer is of greenstone, well formed and polished. It measures $4\frac{7}{8}$ inches in length, $1\frac{3}{4}$ inch in breadth at right angles to the shaft, and $1\frac{1}{2}$ inch in depth. The perforation, instead of being circular by drilling, is ovoid and contracted in the middle; it measures at either end $1\frac{1}{2}$ inch by $1\frac{1}{16}$ inch, and at the middle $\frac{1}{8}$ -inch by $\frac{5}{8}$ -inch.



Fig. 6. Flint Implements from the Cairn No. 1.

The flints from the north cist are as follows :—

1. Knife of pale grey flint, $2\frac{1}{8}$ inches long by $1\frac{3}{8}$ inch broad. The point is broken, the original length having been about $3\frac{1}{2}$ inches. It is of dagger shape, chipped on both edges, and has a natural perforation near the base.
2. Small knife of black flint, with the point also broken; length 1 inch, originally about $1\frac{1}{4}$ inch, very thin, and $\frac{1}{2}$ -inch broad.

3. Brown flint, $1\frac{1}{4}$ inch by $\frac{3}{4}$ -inch, with curved chipped edge at one end, and small hollow scraper at the other.
4. Greyish-black flint, with secondary chipping.

From the south cist:—

5. Knife of dark grey flint, $1\frac{3}{4}$ inch by $\frac{5}{8}$ -inch.
6. Small piece of black flint, $\frac{1}{2}$ -inch in diameter, unworked.

The various relics have been presented to the National Museum by the proprietor.

CAIRN No. 2.

During the excavation of Cairn No. 1, information was obtained of another cairn some 460 yards to the south-east, and 70 yards north-north-west of Foulden Hagg Cottages, also situated in the Hagg Wood. The adjoining ground rises slightly to the north-east and falls slightly in the other directions. The cairn (fig. 7) was circular, 24 feet in diameter, and was composed of earth and stones. The excavation was carried out on 22nd December, Mr J. Graham Callander being present. Beneath the cairn was found a ring of boulders, with an internal diameter of 13 feet 10 inches east and west and 12 feet 10 inches north and south, intermitted to the north-east for a space of 6 feet. This ring, which was some 1 foot 9 inches in width, was similar in form and dimensions to the hut circles in the district, which, however, usually have a narrower entrance to the south or south-east. The boulders of which the ring was formed were not set on end but laid on their sides in a single row, which became double on the north side; the largest measured 1 foot 9 inches by 1 foot 7 inches by 10 inches. Outside the opening to the north-east was a small piece of paving, 4 feet 6 inches by 2 feet, formed of stones some 9 inches by 4 inches set on end in the ground. Within the enclosing ring, and separated from it by a space varying from 1 foot 4 inches to 3 feet 6 inches in width, was a D-shaped structure enclosing the cist (figs. 7 and 8), which measured 5 feet 4 inches by 2 feet 9 inches by 1 foot 4 inches,

and lay with its long axis pointing east-north-east. The bottom, which was unpaved, was 2 feet 7 inches below the top of the cairn, and some 6 inches below the original surface of the ground. No sandstone slabs had been employed in the construction, and the cist was uncovered.

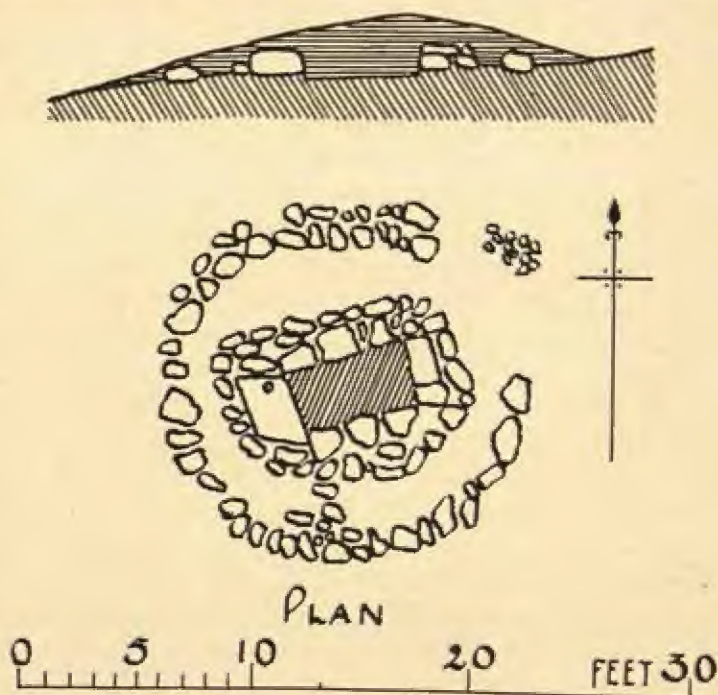


Fig. 7. Plan and Section of Cairn No. 2.

Three large boulders on the north and three on the south formed the sides of the cist, two were placed at the east end, and at the west end was one large block 2 feet 7 inches by 1 foot 9 inches by 1 foot. Behind these stones was another line of smaller boulders forming the periphery of the D-shaped structure; at the east end a second layer of stones had been superimposed to equalise the height of the complete structure.

Several boulders had been placed at the south side across the space between the structure and the enclosing ring. There was no evidence of a trench having surrounded the cairn. The cist, being uncovered, was filled with soil, in the upper layers of which, near the north side, lay a small sandstone block, having on its upper surface a cup-like concavity 3 inches in diameter and $1\frac{1}{4}$ inch in depth. A somewhat similar marking, $2\frac{1}{2}$ inches in diameter and $\frac{3}{8}$ -inch in depth, was



Fig. 8. View of Centre of Cairn No. 2 from the North-East.

observed on the upper surface of the large sandstone block forming the west end of the cist. These markings show no indications of tool marks, their sides being weathered like the surface of the stones on which they are placed.

No urn was found in the cist, and bones were entirely absent. A fragment of reddish pottery, $\frac{1}{2}$ -inch in diameter and $\frac{1}{4}$ -inch in thickness, was found in the south-east corner; several minute fragments of charcoal were found, and eight flakes of brown and grey flint, one of which showed slight secondary chipping. The flints were found at the

east end of the cist. At a subsequent visit, after the excavated soil had been washed by rain, I found, among soil thrown from the space to the north of the cist, three flint flakes—brown, grey, and black—all of which showed secondary chipping.

Site 3.—About 80 yards east-south-east of the Hagg Cottages, to the north of the public road, and between it and the hedge adjoining it, a cist was found in February 1885, and was described by Dr Charles Stuart (*B. Nat. Club*, xi. p. 236). It measured 2 feet 4 inches by 1 foot 6 inches by 1 foot, and was formed of slabs of greenstone, with a bottom slab and a cover. The long axis lay north-west and south-east. Bones of a young person were found, but no urn or flints. The position is very similar to that of Cairn No. 2, the ground rising to the east and falling slightly in the other directions.

Site 4.—A prominent knoll, in a field long under cultivation, lies about 160 yards south-east of the Hagg Cottages. As this seemed a likely spot on which a cairn might formerly have stood, it was examined on 23rd December, narrow trenches being cut across the summit. This revealed the former position of two cists, lying nearly east and west, one being about six feet north-east of the other. Small fragments of the original slabs were found, these having probably been removed when the land was first cultivated. The cavities measured roughly $5\frac{1}{2}$ feet by $3\frac{1}{2}$ feet, and were about 3 feet deep. A considerable amount of the charcoal of whin stems was found, also lignite and cinders, and three pieces of flint—one scraper (brown), one pigmy (white), and one fragment showing no trace of secondary working.

An examination of the reports of cairns excavated in the east of Berwickshire shows that in several instances signs of construction have been observed. Unfortunately it is not always clear whether the circle of stones mentioned formed part of the cairn or surrounded it at a distance.

1 More than a hundred and fifty years ago there stood a cairn

300 yards east of Warlawbank Fort. Beneath the cairn was found a cist, and around the cairn was a large circle 40 feet in diameter, with entrance from the east, all paved with stone. (*Scots Magazine*, September 1759, p. 462.)

2. At Little Billy, till shortly before 1836, stood a cairn 100 yards from the monolith known as the Peeb Stane. It contained a cist, and is described as a large round cairn in an enclosing ring of large granite blocks, open to the south-east. (*Carr's History of Coldingham*, p. 9.)

3. Dr James Hardy has recorded the removal, in 1832, of a horse-shoe structure, open to the south-west, half way between Craw's Cairn and the Penmanshiel Forts. Six or seven cists were found, all empty. He also mentions two cairns in a hollow to the north of St David's Cairn, one surrounded by a rude wall. (*B. Nat. Club*, iii. p. 104.)

4. The same authority describes cairns on Penmanshiel Moor as circular, with a hollow centre, like hut-circles. (*B. Nat. Club*, vii. p. 264.)

5. In 1887 a cist was discovered at Hoprig in "a well-like construction." (*B. Nat. Club*, xii. p. 131.)

In conclusion I should like to record my thanks to Professor Bayley Balfour, for his report on the charcoal from Cairn No. 1; to Professor Bryce, for an examination of the bones from the north cist; to Mr McCallum, Edinburgh and East of Scotland College of Agriculture, for testing the soil from the cists of Cairn No. 1; to Mr M'Lintock, Royal Scottish Museum, for examining matter from the cists at Site 4; and to Mr Curle and Mr Callander, for much advice and assistance given throughout the progress of the work.

"BONES FROM FOULDEN CAIRN NO. 1.

"The deposits submitted to me from the Foulden Cairn consist of a considerable mass of fragments of burnt human bones, and a frag-

ment of an unburnt human femur. The burnt bones, which were found within the cist, are not so completely incinerated as is generally the case in burnt interments, nor are the fragments so small as usual. The articular extremities of the long bones have in certain cases preserved their form, and there are several complete phalanges. It is therefore possible to state that the individual was of adult age. When the several groups of burnt bones were compared, it was found that there was no evidence that more than one skeleton was represented, and further that there was no significance in the grouping of the deposits in the cist, because fragments from all parts of the skeleton occur in each.

"The unburnt fragment found in the grave-like depression is too small to permit of any conclusions regarding the characters of the skeleton.

THOMAS H. BRYCE."

NOTE OF A CIST AT EDINGTON MILL, CHIRNSIDE.

While widening the public road near Edington Mill, in the parish of Chirnside, Berwickshire, on 23rd October 1913, the workmen unearthed a cist, the cover of which lay some 18 inches below the surface of the ground.

The situation is 130 yards east-north-east of Edington Mill House, 200 feet above sea-level, and some 10 yards from the edge of the Whitadder ravine, which here is fully 100 feet deep. The ground falls slightly to the west, but to the north and north-east rises gradually for a short distance.

For several yards round the cist a number of stones were found in the soil, probably the remains of a cairn which had formerly covered the spot.

The cist, which measured internally 3 feet 8 inches by 2 feet 4 inches, and was 1 foot 6 inches in depth, was formed of slabs of red and grey sandstone from the adjacent river banks, and lay with its long axis almost due east and west. The cover was a large slab of grey sand-

stone 5 feet 4 inches by 4 feet by 8 inches; three sandstone flags formed the bottom of the cist, and rested on the bed rock. The sides consisted each of one slab. The height of the east end was made equal to that of the other sides by an additional slab laid on its side, and



Fig. 9. Urn from the Edington Mill Cist, Chirnside.

a space in the south-east corner was neatly packed with smaller stones.

The interior of the cist was partially filled with soil; standing upright in the north-east corner was found an urn of the food-vessel type. There were also found small portions of another urn, probably a drinking-cup, $\frac{1}{4}$ -inch in thickness, bearing ornamentation consisting

of short incised lines arranged obliquely in horizontal bands, and long lightly impressed lines arranged horizontally or as cross-hatching. These lines had apparently been made with a notched instrument. At the east end of the cist were found minute portions of a skull and several teeth, including a molar, a canine, and two bicusps. From these the dentine had been completely eaten away, leaving only the enamel, which showed no signs of decay. A small piece of charcoal was also found in the cist.

The food-vessel urn is made with much regularity, and shows considerable artistic taste. It is composed of reddish-yellow clay, and measures $5\frac{3}{8}$ inches in height, 6 inches across the top, $4\frac{3}{8}$ inches internally across the top, and $2\frac{1}{8}$ inches across the base. The circumference at the top is $18\frac{3}{4}$ inches, and at the widest part 19 inches. The lip, which is $\frac{3}{4}$ -inch wide, is bevelled inwardly, and projects over the interior of the bowl, the sides of which become much thinner at the widest part, and again thicken to $\frac{3}{4}$ -inch at the base. Along the lip run four rows of dotted impressions, and on its outer edge is a series of slight notches. On the upper part of the exterior five twisted cord impressions encircle the urn, and below these is a band formed by short similar impressions arranged vertically. At the widest part of the bowl are two prominent mouldings, with a hollow between, which is divided into sections by four unpierced knobs connecting the mouldings. On the upper moulding are four horizontal cord impressions—two on its upper and two on its under surface. On the upper surface of the lower moulding is a row of dotted impressions, and on the lower surface three cord impressions, the uppermost of which is placed on the crest of the moulding. The knobs are also ornamented by short vertical cord impressions. The lower portion of the urn bears four equidistant bands, each consisting of three horizontal cord impressions; each band is separated by dotted impressions, of which there are five rows. These lines of ornamentation follow the curves of the lower moulding in an artistic manner, where

the latter is drawn upwards to meet the knobs. The urn is now placed in the National Museum of Antiquities.

As the cist had to be removed for the widening of the road, I took charge of the slabs and re-erected the cist in my garden, placing each slab in its original relative position.

IV.

NOTICES OF THE DISCOVERY OF A HOARD OF RAPIER-SHAPED
BLADES OF BRONZE AT DRUMCOLTRAN, IN THE STEWARTRY
OF KIRKCUDBRIGHT, AND OF A VIKING SWORD AT TORBECK-
HILL, NEAR ECCLEFECHAN. By A. O. CURLE, *Director of the Museum.*

In describing the circular earthwork at Drumcoltran in the *Proceedings* of the Society for the session 1892-93, vol. xxvii. p. 106, Mr F. R. Coles relates that "in the trench where deepest there was found in 1837 a hoard of bronze weapons, and in 1867 the present tenant, Mr Copland, found in the same trench an 18-inch blade"; while the Dumfries and Galloway Antiquarian Society's *Transactions*, January 1863, describes the find as one of "twelve very fine bronze spears." This autumn I was fortunate enough to meet Mr James Houston, Dumfries, the owner of the three weapons illustrated here, being the remainder of this hoard, and he knew of only six rapier blades having been found. Of these, two were taken to America; one, believed to be the finest, passed into the hands of a workman; and the remaining three were in Mr Houston's possession. They are slender and tapering, as is characteristic of the type, are covered with a fine green patina, and measure in length respectively 20 inches, 18.2 inches, and 14 inches. The 18-inch blade is still almost of its original length, but both of the others have lost their points. Each has a marked midrib and flutings along the sides. Judging from the appearance of the best-preserved specimen, the bases have been notched, rather than perforated, for the rivets.

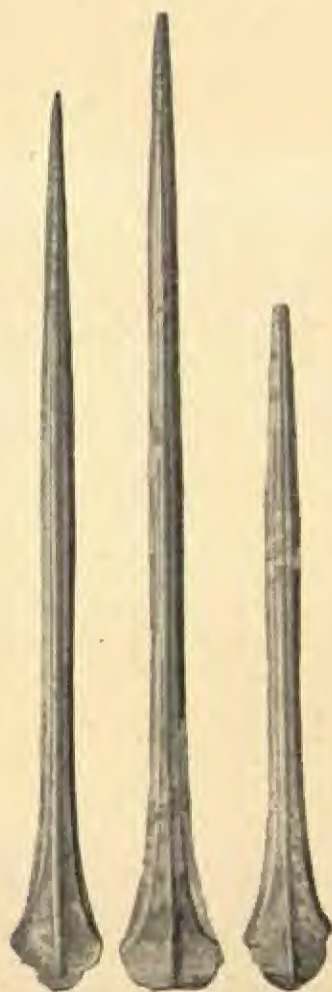


Fig. 1. Three Bronze Rapier-shaped
Blades from Drumcoltran.



Fig. 2. Viking Sword from Torbeckhill.

In January 1867 a discovery of six similar blades, of lengths varying from 12 to 22 inches, was made in a meadow in Devonshire¹; and among numerous other examples recorded by Sir John Evans is one,² also from an earthwork, at Badbury, Dorsetshire. On learning of the importance of these relics, Mr Houston generously presented the best of the three to the National Museum, and has lent the other two for exhibition.

VIKING SWORD.

In the autumn of last year there was presented to the National Museum by John Bell, Esq., of Torbeckhill, Ecclefechan, an iron double-edged sword (fig. 2) of a well-known Viking type, which was found at a depth of some two feet under the surface, on the top of a quarry situated on the left bank of the Mein, just below the outlet of the Annan District Water Works, on the estate of Torbeckhill, and some 9 miles inland from the Solway. No other relics or any evidences of an interment accompanied the sword. The point of the blade is wanting; the complete length of the weapon as existing is 2 feet 6 inches. The pommel is trilobate, and shows on the front of the central division a circular border, which has contained a mark or symbol now indecipherable. It rests on a forked plate, acting as an upper guard, curving upwards at either end, while the guard at the lower end of the tang curves downwards.

A similar sword, found with a pair of convex oval brooches of bronze at Santon, Norfolk, is preserved in the British Museum. In describing the latter sword³ Sir Hercules Read quotes Dr Sven Söderberg of Lund, to the effect that in all the Swedish graves excavated by Dr Stolpe the Santon type of sword is invariably associated with relics of a later date than the year 1000, while the straight guard and triangular pommel accompany interments of the three centuries preceding this date.

¹ *Archæological Journal*, xxiv. p. 110.

² *Ancient Bronze Implements, etc.*, p. 250.

³ *Archæologia*, vol. i. p. 531.

MONDAY, 13th April 1914.

THE HON. JOHN ABERCROMBY, LL.D., President,
in the Chair.

A Ballot having been taken, the following were duly elected Fellows :—

T. BAXENDALE PATTERSON, L.D.S., Carisbroose, 84 Station Road,
Blackpool.

J. HUBERT ROBERTS, P.A.S.I., etc., Bryntirion, Eaton Grove, Swansea.
JOHN RUSSELL, 323 Leith Walk.

The following Donations to the Museum and Library were exhibited,
and thanks voted to the Donors :—

(1) By Miss CANNAN, 87 Cornwall Gardens, London, S.W.

Greek Vase, with black Palmette ornamentation on a red ground,
height $6\frac{1}{2}$ inches.

(2) By J. G. HAWKSLEY BEDFORD, F.S.A. Scot., the Author.

Pedigree of the Family of Bedford of Hull, Dewsbury, Penistone,
etc., Co. York, and Collateral Branches, viz. :—Hall, Middleton,
Hawksley, and Pashley. Extracts of Manor Court Rolls and Wills,
Memoranda, etc. Sheffield, 1914. 4to.

(3) By ROBERT DE CARDONNEL FINDLAY, F.S.A. Scot.

La Sala d' Armi nel Museo dell' Arsenale di Venezia, by G. de
Lucia. Roma, 1908. 4to.

(4) By J. GRAHAM CALLANDER, F.S.A. Scot., *Secretary*.

Transactions of the Banffshire Field Club. Odd numbers between
1881 and 1887 ; complete set from 1887 to 1909.

- (5) By THOMAS JOHNSON WESTROPP, M.A., M.R.I.A., the Author.
 Kilkee (Co. Clare) and its Neighbourhood. Part III. Dunbeg to
 Kilkee. Limerick, 1914. Pamphlet, 8vo.



Fig. 1. Urn from a Sand-pit at The Cuninghar, Tillicoultry.

- (6) By THE ROYAL COMMISSION ON ANCIENT AND HISTORICAL
 MONUMENTS (SCOTLAND).
 Fifth Report and Inventory of Monuments and Constructions in Gal-
 loway. Vol. II. Stewartry of Kirkcudbright. Edinburgh, 1914. 8vo.
- (7) By THE MASTER OF THE ROLLS.
 Calendar of the Patent Rolls preserved in the Public Record Office.
 Edward III. Vol. XV. A.D. 1370-1374. London, 1914. 8vo.

There was exhibited by Colonel Wardlaw Ramsay of Whitehill an
 Urn (fig. 1) of food-vessel type, found 14th January 1914, $4\frac{1}{2}$ inches
 VOL. XLVIII. 22

in height by $4\frac{3}{16}$ inches broad at the mouth, decorated with the oblique impress of a twisted cord.

The following particulars of its discovery were supplied by Mr Fraser, estate overseer, Tillicoultry :—

The urn was discovered in a sand-pit situated about 150 yards to the north of the site of the previous discovery of an urn at The Cuninghar in 1895. It stood upon a flat stone about 10 inches square, at a depth of 2 to 3 feet below the surface, and was protected on either side by two side stones some 18 inches square, but no covering stone or end slabs were seen. The main axes of the slabs were north and south.

I.

NOTES ON A COLLECTION OF POLISHERS AND OTHER OBJECTS
FOUND ON THE SITE OF THE ROMAN FORT AT NEWSTEAD,
MELROSE. EXHIBITED TO THE SOCIETY BY JOHN M. CORRIE,
F.S.A. SCOT.

The extensive excavations undertaken by the Society of Antiquaries of Scotland at Newstead Roman Fort, in 1905-10, revealed traces of the Roman occupation of Scotland surpassing in interest any that had previously been recorded. Notwithstanding this gratifying result, Mr James Curle has pointed out that, owing to the cost involved in removing the earth from the large area dealt with at Newstead, it was found impracticable at certain points to make a thorough exploration ;¹ and from the fact that during the whole course of the excavations only two burials were discovered, he infers that somewhere on the outskirts of the fort the cemetery has still to be located.²

¹ *A Roman Frontier Post*, p. 42.

² *Ibid.*, p. 19.

In view of these statements it seemed reasonable to suppose that a number of small objects might still be picked up, and a systematic search at the site of the fort and its annexes, undertaken at intervals during the years 1911-14, has amply justified this conclusion. The collection exhibited consists of twenty-three burnishers or polishers, fourteen pieces for a game, ten fragments of beads, a fragment of "Samian" ware with maker's mark, a small portion of a glass armlet, a weight, a fibula and small mounting of bronze, two whetstones, a stone sinker (supposed), a chipped stone of unknown use, three scrapers of flint, a knife-like object of pitchstone, and a number of flints of no definite character, but nearly all showing traces of secondary working.

In a few instances the objects supply new records or furnish additional examples of early workmanship or decorative art, although, as will be seen, they cannot in all cases be identified with the occupation of the Newstead area by the Romans.

The burnishers or polishers (fig. 1) are in the form of quartz-like pebbles commonly worked or polished on the one side. They are obviously of two classes, each of which must have been used for a distinct purpose, although, in the present state of our knowledge, it is impossible to fix with certainty the particular use to which each class was applied. The contrast between the two types is deserving of careful consideration. In one class, represented by eighteen specimens, the pebbles are roughly conical, with a convexedly ground surface showing distinct traces of striation, indicating a movement always in the same direction. They can be easily gripped between the finger and thumb, and the fact that the worked face is regularly convex, and in no instance shows a facet or sharp edge, seems to imply that they were not opposed to a hard, unyielding surface. They may possibly have been used in conjunction with sand in the dressing of hides. The rough, sandy particles would cause the striation which we find across the face of the pebbles, while the yielding surface of the

skins would explain the convex form, more particularly if the skins were stretched on pegs preparatory to drying. It is important also to note that a use of this kind would account for the movement always in the one direction. A backward and forward motion would undoubtedly have had the effect of roughening rather than of dressing the inner surface of the skins. It will be observed that two of the speci-

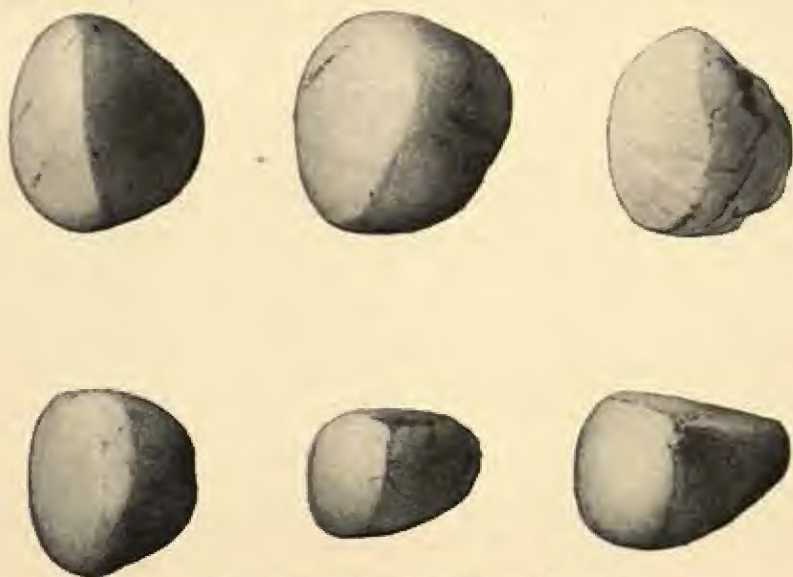


Fig. 1. Six Burnishers or Polishers of Quartz.

mens have been subjected to use on two sides. This is probably an unusual feature. Mr A. O. Curle informs me that specimens have been found in Wigtownshire and in Aberdeenshire, and it may be of interest to record that I have also found them in the neighbourhood of Dryburgh, in the parish of Mertoun, Berwickshire. Mr Curle is disposed to think that they may not be uncommon, although they have hitherto escaped observation. At the present time the only specimen in the National Museum is one presented by the writer.

In the second and, generally speaking, smaller variety, represented by five specimens, one side of the pebbles has been worn flat and smooth in some polishing process. A single specimen was discovered during the excavations undertaken by the Society of Antiquaries of Scotland, but it would seem to have escaped the notice of Mr James Curle, as no reference is made to it in his painstaking volume.¹ They have not been found beyond the limits of the fort and its annexes; and while this seems to suggest that they are of Roman origin, it must be remembered that we have no recorded instances of their discovery at any other Roman station in Scotland.

MISCELLANEOUS OBJECTS.

1. *Pieces for a Game*.—These are made of white and black vitreous paste, of a fragment of "Samian" ware, and of bone. The piece of "Samian" ware has its sides carefully chipped and ground so as to give it a circular appearance. Similar pieces in blue and yellow vitreous paste were found during the excavations (*cf.* Curle, *op. cit.*, xciii). Those exhibited were all found on the site of the fort or east annexe. A regular chequer-board, incised on stone, such as might have been used with these pieces, was found recently at Corstopitum (Corbridge).

2. *Beads*.—No complete beads have been found, but fragments are exhibited of the common ribbed melon-shaped variety of blue porcelain paste and glass, and of a blue glass bead decorated with wavy lines of opaque white (*cf.* Curle, *op. cit.*, xci).

3. *"Samian" Ware with Potter's Mark*.—The fragment of "Samian" ware supplies a new record for the Newstead area. It seems to have formed part of the bottom of an undecorated platter-shaped vessel, and it bears on the inside the impress of a potter's mark—BVTTVRRI. From the texture of the ware and the highly raised plane of the bottom, it can be accurately assigned as a second-

¹ *A Roman Frontier Post and its People.*

century type, probably from the Lezoux potteries (*cf.* Curle, *op. cit.*, xl, 22). It was found on the site of the fort. Specimens by the same potter have been found at Camelon,¹ and at several places near London, but the name has not previously been noted at Newstead.

4. *Portion of a Glass Armlet.*—This specimen also furnishes an additional example from the Newstead area, as it differs in its decoration from other fragments found on the site. It is of a blue-grey colour, ornamented with a slightly raised rope-like pattern in three lines, the two outer being of blue and white, and the central line of tawny brown and white. Found on the site of the fort.

5. *Weight.*—This specimen came from the east annexe. It is circular, with flattened upper and under sides, and weighs 604 grains. The two small holes drilled half-way through the weight on the one side may have been intended for pins used for the attachment of an ornamental top. An interesting example of this kind, found recently at Talnotrie, Kirkcudbrightshire, has been described and figured in the *Proceedings of the Society*.²

6. *Fibula.*—This object is of the so-called "knee-fibula" type, evidently second century. It retains the socket for the spring, but the pin and pin catch are missing (*cf.* Curle, *op. cit.*, lxxxvii; and *Cappuck Report*, fig. 11, 1). Found on the east annexe.

7. *Mounting of Bronze.*—The small bronze mounting is provided with tangs, apparently for attachment to leather. It was found on the south annexe.

8. *Whetstones.*—Whetstones occurred at Newstead in large numbers. They were usually made from river stones, but among them were a few which were clearly manufactured articles. The two exhibited have been carefully fashioned, both having a perforation at the one end. The larger measures $3\frac{1}{8}$ inches and the smaller $1\frac{1}{2}$ inches in length. Both specimens were found on the south annexe.

¹ *Proceedings of the Society of Antiquaries of Scotland*, vol. xxxv. p. 392.

² *Ibid.*, vol. xlvii. p. 13.

9. *Stone Sinker* (supposed).—Net-fishing is suggested by the sinker of stone having a notch in each side to prevent the cords or thongs, by which it was fastened, from slipping. It was found on the site of the fort. Similar stones have been found at Dryburgh, Bemersyde, and Whitrigbog in the parish of Mertoun, Berwickshire, and at St Boswells Haugh and Fairnington in the county of Roxburgh. They are occasionally found with two or more notches in each side.

10. *Chipped Stone of unknown use*.—This stone came from the site of the Great Camp, and in some respects it closely resembles the rudely dressed circular discs from the Culbin Sands to which attention was directed a few years ago by the late Sir Arthur Mitchell. To quote from his paper: "At present I desire to direct attention to one object found on the sands. I do so because as yet Scotland is the only country, and Morayshire the only part of Scotland, in which it has been found. . . ." "There are now seventy-two specimens in the Museum, and they constitute archæological material as fully and truly as polished axes or delicately flaked flint arrowheads. No one can say what word or sentence in the unwritten story of Scotland they may some day supply. They can only be described as rudely dressed circular discs of stone, of sizes varying from about $1\frac{1}{2}$ to 5 inches in diameter, and from about $\frac{1}{2}$ an inch to about $1\frac{3}{4}$ inches in thickness."¹ The Newstead specimen is oval-shaped, slightly concave, and measures 5 inches by $3\frac{1}{2}$ inches by $\frac{3}{4}$ inch.

11. *Scrapers of Flint*.—The scrapers of flint are all small. One specimen from the east annexe has been very carefully fashioned.

12. *Knife-like Object of Pitchstone*.—The curious opaque, black, knife-like object of pitchstone was found on the site of the fort. It calls for mention because specimens made of pitchstone are uncommon.

¹ *Proceedings of the Society of Antiquaries of Scotland*, 1901-2, p. 36. The type is figured in the *Museum Catalogue*, 1892, p. 94.

II.

NOTES ON A FURTHER EXCAVATION OF ANCIENT DWELLINGS AT SKARA, IN THE PARISH OF SANDWICK, ORKNEY, MADE DURING AUGUST 1913. BY W. BALFOUR STEWART, F.S.A. SCOT. WITH NOTES ON THE REMAINS FOUND, BY HON. PROFESSOR W. BOYD DAWKINS, F.R.S., D.Sc., F.S.A.

It is now upwards of fifty years since the late Mr Watt excavated a portion of the ancient dwellings situated on the Bay of Skaill, in the parish of Sandwick, Orkney. Mr George Petrie fully described the work done at that time in the *Proceedings* of the Society of Antiquaries of Scotland, April 1867.

During August 1913, while on a visit to Skaill, with permission from the Trustees of the late Mr W. G. T. Watt of Breckness and Skaill, I commenced to clear the principal dwelling, and passage, which is shown on the plan, copied from that made by Mr Petrie in 1867, and published in the *Proceedings* mentioned above.

A large quantity of sand and weeds had to be removed, to place the dwelling and passages in order, prior to the arrival of Professor Boyd Dawkins and other archæological friends.

After clearing out passage AA on the south side—the furthest explored portion in that direction reported by Mr Petrie—the passage marked BA was discovered. This passage is 3 feet high, and is built with a sloping roof. It reaches a cross entrance at C.

From this point an admirably built passage, leading in a northerly direction, was opened. This passage is 3 feet 9 inches in height, 3½ feet in width, and 6 feet 4 inches in length, with a flat roof, and is built without any binding material. It takes a westerly direction at the spot marked D.

This passage is interesting, as it is the only one to be seen at Skara complete with its roof. All the other passages previously discovered

are open, though Mr Petrie believed that they also were roofed originally.

Just beyond this passage is a recess KEF, which opens into another habitation, not yet explored, at the spot marked E.

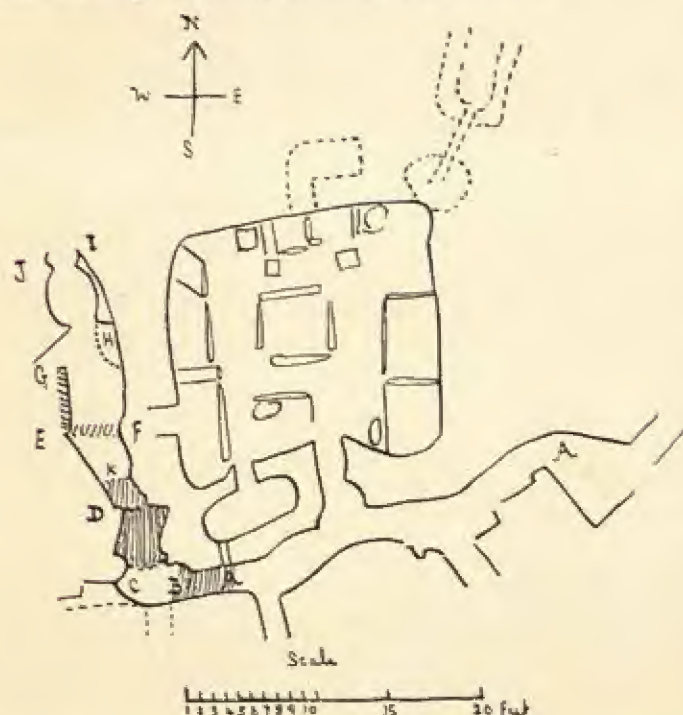


Fig. 1. Sketch Ground-plan of part of the Ancient Dwelling at Skara Brac, Skaill, Orkney.

A hearth was found in the corner at F, with an earthenware pot, and charred bones, too soft and broken to remove.

Across the hearth, between E and F, a stone is standing, 3 feet 10 inches in height; and between E and G a stone lies, 5 feet 5 inches long and 1 foot 4 inches high.

On reaching the floor of this habitation, quantities of clay appeared against the base of the wall. This proves Mr Petrie's view that, on opening the landward portion of the dwellings, clay would be found brought there by the Pictish people to plaster or bind their walls.

When excavating above the hearth a large collection of limpet shells, and beyond the hearth, at the point marked G, 120 astragali (ankle-bones) of oxen and eight of red deer, were found. These were not midden finds. Scarcely any other bones were found near the collection, which seems to show that they were preserved for a purpose. Astragali have been found elsewhere, and are generally supposed to have been used as an early form of dice. It is possible that the limpet shells and astragali were used for some gaming purpose, but it is curious that in an adjoining habitation bone cubes marked as dice were also discovered. These were reported and illustrated by Dr Wm. Traill (see *Proceedings* of the Society, April 1868).

A stone saw of old red sandstone (fig. 6), and the rib of a whale, broken at each end, and measuring 5 feet 4 inches, were found between E and G.

The built-out portion of the wall at H is of the nature of a buttress.

At the point marked G a loose stone was found, on which was cut a single twig rune (fig. 2). A copy of this was submitted to Professor Magnus Olsen, who translated it "K C." Probably this was cut by an idle Norseman when visiting Skara, in the same way that modern "Goths" initial stones in Orkney to this day.

There is no trace of a later occupation of the dwellings at Skara.

Another hearth was found between I and J, and above this hearth, in the wall, was found an incised ball of basaltic rock measuring $2\frac{1}{2}$ inches in diameter (fig. 3).

The late Mr Samuel Laing, writing on "The Age of the Brochs," in January 1867 (see *Proceedings* of the Society of Antiquaries), wrote with reference to the dwellings at Skara: "There is not the slightest trace of any pattern or ornament upon any of the articles of stone or

bone found at Skaill, or upon any of the numerous fragments of urns and pieces of pottery."



Fig. 2. Twig Rune cut on a loose stone at Skara, Skaill.

The incised ball found at Skara (fig. 3), which is the third found there, seems to be the only one of its kind found in Orkney, the other balls being carved.



Fig. 3. Stone Ball incised with Rectilinear Pattern.

Dr Wm. Traill in 1868 reported the find of an ornamented bone at Skara, the incised lines on which are very similar to those on the

stone ball. Dr Traill noted the geometrical lines on the bone as being similar to some found in the Pict's House at Papa Westray.

"Notes on Small Ornamented Balls found in Scotland," by J. A. Smith, M.D., *Proceedings of Society of Antiquaries, Scot.*, vol. xi., 1874, describes a stone ball in the Perth Museum as being covered with patterns of incised lines, crossing one another diagonally, and also showing a pattern of parallel lines covering only a part of its surface.

Dr Smith in 1874 compared the incisions on the ball in the Perth Museum to the ornamentation on the large thistle-like heads of the silver pins and brooches which were found at Skaill, within a short distance of Skara Brae, and remarked that considerations such as



Fig. 4. Bone Scoop found at Skara.

these inclined him to think that, instead of belonging to Stone or Bronze Ages, or any such indefinite or ancient period, it was much more likely that these stone balls might belong to the ancient, though comparatively historic, periods of the sculptured stones, of the silver brooches and Cufic and Anglo-Saxon coins. Dr Smith also considered that the two balls found at Skara told against any idea of their being relics of very great antiquity.

These comparisons are very interesting, and seem to me to confirm the view apparently taken by Professor Boyd Dawkins, that the rude remains of Skara do not necessarily imply a remote antiquity.

Between E and G the scapula of an ox, used as a spade or shovel, a bone scoop or spoon (fig. 4), and several bone pins or awls were found.

A broken hammer-head or mace of hornblende schist with quartz was given to me recently, found at Skara. The late Mr Samuel Laing mentioned in his paper on "The Age of the Brochs," in 1867,

that the number of split pebbles adapted for knives or scrapers was so great as almost to lead to the supposition that there must have been a manufactory of these articles at Skara. I discovered so many whilst digging as almost to make me think that I had struck the habitation of the Master Cutler of the people.

Mr Petrie wrote in 1867 that it was premature to fix an age for the ruins and relics discovered at Skara, before the whole of the remaining buildings had been thoroughly explored, but hoped that discoveries in middens and buildings in the district would help to point out the age of the people who built and lived there.

We were most fortunate in having the eminent archæologist, Professor Boyd Dawkins, the author of *Early Man in Britain*, with us during most of our excavating work.

I have not mentioned the innumerable bones that were dug up, as these will be referred to by Professor Boyd Dawkins in the accompanying report, which he has kindly sent to me, with permission to publish it together with these notes on our excavation work.

*List of Finds presented to the National Museum of
Antiquities of Scotland.*

An incised ball of basaltic rock.

Stone saw.

A bone scoop.

Scapula of an ox, used as a shovel.

Hammer-head (broken), perforated.

NOTES ON THE EXPLORATION OF SKARA BRAE DURING AUGUST
1913, by Hon. Professor BOYD DAWKINS, D.Sc., F.R.S., F.S.A.

The specimens discovered in the course of the further excavations carried on by Mr W. Balfour Stewart, in the autumn of 1913, consist of implements, ornaments, and the remains of the animals left behind in the chambers and passages, and scattered through the refuse-

heap, mainly formed of limpets and periwinkles, intermingled with blown sand.

The Implements.—The most abundant implements are pebbles of hard sandstone from the adjacent heaps, split so as to offer a cutting edge, in many cases chipped by use, and similar to those used for preparing skins by the native tribes of North America, who prefer



Fig. 5. Professor Boyd Dawkins examining the articles found, which are stored in a recess of the ancient building.

them to iron tools. They probably here were also used for collecting the limpets off the rocks, as well as for various other purposes.

There were also pebbles, some burnt, that had been used as pot-boilers, and circular discs of slate, which were probably pot-covers.

One thin piece of slate, 10 inches long (fig. 6), had the natural edge at the junction of the joint with the cleavage plane regularly notched so as to form a saw. It presents no sign of wear, and in its present

friable state could not be used for sawing. I am not aware that similar articles have been discovered elsewhere. There were also bone awls for making holes in skins. Two shoulder-blades (scapulae) of the small domestic ox (*Bos longifrons*), with the spine removed, much worn by use, had been made into spades or shovels. They present a strong resemblance to those found in the Neolithic flint-mines of Cissbury, near Worthing, in Sussex, along with picks made of the antlers of red deer. Two imperfect basins, hollowed out of the vertebra of a whale, were also met with, similar to those found elsewhere in Picts' houses and brochs, and preserved in the National



Fig. 6. Stone Saw, 10 inches long, found at Skara.

Museum of Antiquities of Scotland. A bone, carefully ground and hollowed, may have been used for a spoon or marrow scoop (fig. 4).

Pottery.—The few fragments of pottery, coarse and hand-made, dark inside and red at the outer surface, belong to flat-bottomed cooking pots of the same type as those in the Museum at Skail. They are without ornament, and have been very imperfectly fired.

Stone Mace-heads.—The polished stone ball (fig. 3) found hidden in the wall close to a hearth is of peculiar interest because it is the third found in Skara Brae, the two others having been discovered in the digging of Mr Watt. Both of these are adorned with knobs. This is unique in bearing groups of lines roughly scratched upon its surface, and forming a geometrical pattern. Similar polished stone balls have been met with in Orkney and elsewhere, and some are ornamented with various designs, among which we may note the spirals of the Bronze Age (*Catalogue of National Museum*, pp. 63-64), and the flamboyant spirals (*Cat.*, p. 65) of the Prehistoric Iron Age.

They are probably the heads of life-preservers or of maces attached to a more or less flexible handle with thongs or with a covering of leather, cut so as to show the stone inside. The fragment of polished stone hammer, with a large perforation for the handle, and without traces of wear, is undoubtedly a mace-head used, like the above, in battle. It is of a Bronze Age type found in Orkney and in Britain and Ireland.

Bone Pins and Beads.—Bone pins, and a large polished bead made from the tooth of a whale, show that the inhabitants of Skara Brae were not without personal ornaments. The latter are amply represented in the collection made by Mr Watt from Skara Brae.

Twig Runes and Cross.—The discovery of a twig rune (fig. 2) on a slab of sandstone by Mr W. Balfour Stewart adds a new fact to the history of the group of habitations, because it proves that they were visited, if not occupied, by the Saxon or Norwegian settlers who have left their runes incised on the stone circle of Stennis, and in the interior of Maes Howe, and elsewhere in the Orkneys. The twig runes of Maes Howe were made in the twelfth century, and, according to Mr Collingwood, there were tree runes slightly differing from them in use by the Angles in Yorkshire in the eighth century. Skara Brae is therefore brought by this discovery into touch with history.

This is further proved by a stone mould in the Museum at Skail (fig. 7). The mould is that of a rude equal-armed cross of the early Christian Celtic type, abundant in Ireland and Scotland, and occurring also in England and Wales, which shows that Skara was frequented after the introduction of Christianity into the Orkneys by the missionaries of St Columba, in the last quarter of the sixth century.¹

¹ St Columba, the great apostle of the Northern Picts, converted Brude, King of the Picts and overlord of the Orkneys, in 565, while on a visit to him at his fort near Inverness. He told Brude, in the presence of the chief of the Orkneys, to take care of the brethren—"Should they happen, after many wanderings, to come to the Orcadian Islands, do thou carefully instruct this chief, whose hostages are in thy hands that no evil befall them (the brethren) within his dominions."—Stokes, *Ireland and the Celtic Church*, 6th ed., 1907, p. 121.

In my opinion, this fixes the date of the introduction of Christianity into the Orkneys, among a people partly Picts, and partly of Nor-



Fig. 7. Stone Mould from Skara, obverse and reverse.

wegian, and probably also of Saxon stock. With regard to the latter element in the population, the statement of Claudian, that Theodosius

in 369 made the Orkneys reek with Saxon blood, leaves no doubt that they were then one of the bases from which the Saxons attacked the British Isles. This is also confirmed by the testimony of the place-names in the topography of the islands. They are, with few exceptions, Saxon or Norwegian, and we miss those of the Goidel and Brython, so abundant in Scotland.

The Animal Remains.—The numerous bones and teeth of mammalia met with in the huts and in the surrounding refuse-heap belong mostly to the small shorthorn ox (*Bos longifrons*), the ancestor of the Highland cattle and of all the small existing European breeds, to the horned sheep and the red deer.

The whales are represented by a rib and two vertebræ. There was also the skull of an otter. Bones of wild duck and geese are the only remains of birds that have been identified. To this last we may add the domestic hog, the horse, and the common fox, represented in the collection from Skara Brae in the National Museum at Edinburgh.

The short-horned ox was the principal domestic animal. It is of the small type usually found in peat-bogs, submarine forests, and in association with implements of the Neolithic, Bronze, and Prehistoric Ages, throughout Europe and Asia Minor. In the British Isles it is met with in Roman refuse-heaps, but there, as we might expect, it is slightly larger.

The horned sheep is remarkable for its slender, deer-like legs, and belongs to the group of the Highland and St Kilda breeds. It is closely allied to a breed possessed by the Romano-British farmers at Woodcuts, a village explored by General Pitt-Rivers, on the Downs of Wiltshire.

The red deer bones and antlers are, as might be expected from their restricted range, smaller than those of Scotland. They were probably indigenous in the islands, then better provided with cover than they are now. They may, however, have been obtained from the mainland in hunting expeditions, such as those of Ronald and

Harold, Earls of Orkney, to Caithness at the close of the eleventh century. They must, however, have been exterminated as the population increased and the cover for them diminished in the bare, wind-swept islands. It is doubtful whether the otter or the fox were used for food.

The inhabitants of Skara Brae lived mainly on their flocks and herds and on venison, varied by a diet of limpets and periwinkles, and an occasional mussel or oyster.

Although the sea abounded in fish, apparently fish formed a small part of their food. The few fragments of whales may have been derived from a stranded individual, and the same holds good of the tooth of walrus in the National Museum. The whole suite of specimens from Skara Brae, which I have examined at Skaill and in Edinburgh, falls in line with those from the other group of huts and brochs in the Shetlands, the Orkneys, and generally in Scotland.

The polished stone axes previously found, and the polished stone mace-head recently found, point to the Neolithic and Bronze Ages that are amply represented in the Orkneys in the collection of Mr J. W. Cursiter. The cross implies that Skara Brae was frequented after the introduction of Christianity, and the Runic inscription that it was also frequented after the settlement of the islands by the Low Germanic tribes, Saxons and Norwegians. The rough stone implements made of split pebbles, so abundant, do not necessarily imply a remote Neolithic antiquity, and may be the result of the enjoyment of the simple, ascetic life led by a Christian community established by the missionaries of St Columba.

It is hoped that Mr W. Balfour Stewart will complete the exploration, and furnish materials for telling the whole story of Skara Brae, and throwing light on a very obscure portion of the history of the Orkneys.

III.

AN EDINBURGH TRADE DISPUTE DURING THE COMMONWEALTH.
By CLARENDON HYDE CRESWELL, F.S.A. Scot.

Thanks to the efforts of Mr Scott Moncrieff, the subject of the Surgeons and Barbers of Edinburgh is not entirely new to the Society ; but whereas our worthy Secretary, in his most able and interesting article read in this hall some few months ago, confined himself mainly to the period of separation of those anciently constituted crafts, I have been able, through the indulgence of the President and Council of the Royal College of Surgeons, who have allowed me access to the whole of their documents and minutes, to gather a few incidents which happened many years before that disunion took place, and one of which—a case of a refractory Canongate barber—with your kind forbearance and patience I propose relating here this afternoon, as it throws a vivid light on the conditions of the city when under the power of Oliver Cromwell. In fact, it was no less a person than Cromwell's " honest " lieutenant, George Monk—afterwards created Duke of Albemarle for his services at the Restoration,—who finally settled the question.

In order to make the narrative more intelligible, it is necessary to remind you that since the year 1505 the Incorporation of Surgeons and Barbers had held the exclusive right or monopoly of exercising their trades within the city of Edinburgh. Their jurisdiction was for many years limited to the ancient bounds of the city, but such outlying districts—or suburbs, as they were called—as Leith, the Canongate, and Portsburgh had trade arrangements of their own. In 1636, however, when the superiorities of the Canongate fell into the hands of the city, considerable friction arose amongst the various crafts which were now to be linked up with those of Edinburgh. In

this way the barbers of the Canongate, with whom our story deals, and who hitherto had been free traders, showed great reluctance to come under the jurisdiction of the Surgeons and Barbers of Edinburgh, and to be compelled to subscribe to the funds of a society from which they would reap but little benefit in return. To the credit of the surgeons, they allowed some years to elapse before attempting to exercise their authority; and although the Town Council in 1641 had passed an Act "that in the matter of Chirurgie" the inhabitants of the suburbs should be provided with skilful and honest men, "and not left to the arbitrament and impostor of women and ignorants," it was not until May 1649, after some encroachment had been made upon their privileges, that the Surgeons induced the magistrates to order the bailies of the newly acquired district to take in the basins and signs of the unfreemen barbers within their burgh until they should come in and subject themselves to the orders of the Surgeons of Edinburgh. To this Act the authorities of the Canongate paid so little attention that a month later one of the Edinburgh magistrates was sent down to the Canongate, along with the Deacon of the Surgeons, to see the order carried out. Even this seems to have had but little effect, for in the following July the bailies of the Canongate were summoned to appear before the Lord Provost and Council of Edinburgh, when they promised "to give concurrence and assistance to the Deacon of the Chirurgeons against the unfreemen within their bounds at any time he pleased to require or desire them to that effect."

This brought matters to a crisis, and eventually the barbers themselves were arraigned before the Court at Edinburgh, where they protested loudly that neither the magistrates nor the Surgeons were ever authorised by any right flowing from the barony of Broughton, to assume a control over them in exercising their craft within the regality; that they were never erected into a company nor subject to a deacon; but that they, their authors and predecessors, had pursued their trade in the past at their own hand only, without permis-

sion or warrant from anyone. On the magistrates declaring, however, that barbering within the Canongate could no longer be carried on without a licence, a certain Robert Preist and five other barbers submitted themselves and expressed their willingness to comply with the magistrates' decision. They were then appointed by the Surgeons to be free barbers within the bounds of the Canongate only, where they were to have full power to follow the barber craft; the Surgeons on their part undertaking to protect them against all others not so admitted. They also took the oath to obey all the Acts of the Incorporation, to pay a quarterly subscription of 13s. 4d. for themselves, and £4 and 40s. respectively for the booking of servants and apprentices.

Shortly after this the city was occupied by the English troops, and Preist, the Canongate barber mentioned above, appears to have made so many influential friends amongst them that, in spite of his oath to dwell and pursue his avocation within his own burgh, he actually took a shop within the city walls, and there for a time successfully plied his calling in defiance of the wrath of the Surgeons and of the power of the magistrates. Considering that this privilege was more than the Incorporation had power to grant, even to their own sons or apprentices until they were admitted surgeons, the feelings of the Craft can be better imagined than described.

Incensed at Preist's presumption, and envious, no doubt, of the good trade he was driving, the freemen Barbers of the town complained bitterly of his presence amongst them, and petitioned the Surgeons to have him at once removed. Two of their number, they declared, were already broken since Preist's encroachment, and unless he was speedily suppressed, they were afraid that more of their brethren would be brought to poverty, and so become a burden to the Society and the place they lived in. "Therefore our humble desire and request is to you," concluded the petition, "as ye will be answerable to God and prevent the fearfull cases of many families, widows and

orphans within your Incorporation, be faithful in the trust put upon you by us and so much the more because of the oath of God lying upon you that ye leivens lawfull means for maintaining of us in our lawfull rights and privileges, which we are confident will bring much peace to you in the day of your accompts, encouragement to all your successors and comfort to us who are groaning under the present oppression."

Preist was now cited to appear before the Surgeons for transgressing their Acts and for violating his oath. The meeting took place on 4th October 1651, when, in reply to the deacon as to why he had broken his word, viz. not to trim nor to put out signs nor basins within the burgh, but in the Canongate only, Preist said he would not observe that oath nor obey that Act, but that he would work within the burgh of Edinburgh according to the liberty and warrant granted to him by the Captain of the Castle, and in a disdainful manner said, "Goe ye ask of him by what liberty I work," and immediately he turned his back rudely, saying, "Do what ye will ye will not mend yourselves," and went out of doors. The Surgeons then applied to the magistrates to have Preist sent back to the Canon-gate, but a letter dated August 1652 shows that, although he was then under orders to quit the town, he had not complied with it. The letter is addressed to "Our loving friends the Deacon and rest of the trade of Barber Chirurgeons within the Citte of Edinburgh," and bears the signatures of the four English gentlemen who had been recently appointed judges or commissioners for the administration of justice in Scotland. It briefly states: "Whereas Robert Preist, barber inhabitant in the Citte of Edinburgh, being not free thereof, is ordered to remove out of the same, but we being informed that between terms, houses—at least any convenient—are not to be taken and he being willing to remove at the end of the term, and in the meantime not to hang out his basins, we therefore desire that this, his reasonable request, may be afforded, and we shall take it

as a courtesy. And so rest, your friends, George Smyth, A. Owen, T. March, Edward Mosely."

Unwilling to break into open dispute, and possibly being influenced in some degree by the quality of the writers, the Surgeons exercised their discretionary powers by not insisting upon Preist's removal, so long as he refrained from exhibiting the symbols of his trade. We next find a copy of a letter from Robert Lilburne, commander of the English troops in Scotland, better known perhaps as one of the Regicides, to the Lord Provost, containing a proposal that his Lordship should permit Preist to continue his business in Edinburgh, in spite of the Surgeons and of their jurisdiction over the Barbers. The letter was written on 30th March 1653, at Dalkeith, where the English had established their headquarters, and runs as follows :—

"MY LORD,—This bearer, Master Preist, having (so I am informed) for about these ten years past followed the profession of a barber in Scotland and behaved himself civillie and inoffensivlie, and having for about a year and a half past lived in Edinburgh, and being now threatened to be debarred from the exercise of his profession there. I am desirous of recommending him unto you, that you will give order that he may be permitted to exercise his calling for the trimming of the English officers and others in Edinburgh, which I conceive you may do without infringement of the liberty of any Companie in the Cittie (he not at all meddling with Chyrurgerie) and thereby you will show ane act of civillitie to the officers, and I shall be readdie upon all occasions to answer your respect to them and him therein."

With the commander of the forces, the English judges, and the Captain of the Castle all actively interesting themselves on Preist's behalf, it is not surprising that the Incorporation was somewhat anxious as to its position, besides being deliberate and cautious in its actions. A letter from a well-wisher of the Craft, holding a position of public trust, in reply to one he had received from the Deacon and brethren of the Incorporation, shows them to have been all this.

While giving good advice, he reminds them that in such affairs they alone were not sufferers, but the whole nation along with them. In referring to that "contemptible fellow Preist," he considered it strange how a man could offer to pity him in so unjust a thing. As for the officers of the army, he continues, "I know not what they may not do if they pity him, and as for his power with the Judges of Parliament, which is most to be feared by you, I am confident, as yet, there is no such thing passed here in Parliament, neither do I think they would stoop so low as to take notice of such things, for sure I am, that such things will not be honoured by the Authorities, wherein I hope we shall not be wanting to obviate or represent as occasion offereth. In the meantime," the letter concludes, "be not discouraged, but maintain your liberties with prudence and confidence against your present disturber, and all such snarling corries of whom be not afraid but assert your liberty, for I find not nor fear not no danger in so doing." The letter bears the signature of John Mylne, who, besides being Master Mason to the late King, was much given to politics. He several times represented the city of Edinburgh in Parliament, and at the time in question was in London upon Parliamentary business.

The contents of the letter seem to have encouraged the Incorporation, and to have inspired them with so much confidence that they immediately intimated to Preist with all legal formality that, unless he removed out of the town by Whitsunday 1653, they would declare him "infamous" and debar him from the benefits of his liberty "in all tyme coming."

But, alas! Whitsunday passed, and the new year dawned, and still Preist continued his work in the city. The march of events at this time is difficult to follow, but apparently recent changes had lost to Preist his most valued friends. Two of the judges had already been recalled, and the spring of 1654 found Lilburne superseded by Monk, whose courtesy and urbanity made him many friends in the

Scottish capital. Now was the opportunity for the Surgeons to seek justice. They did—and got it.

A last letter on the subject reveals the concluding facts that, on the representation of the Surgeons, Monk ordered a commission to assemble, to inquire thoroughly into the case, and to report the result to him. Finally, in September, Monk writes from Dalkeith: "Upon the report of the referees within mentioned, it having been made appear that one Robert Preist gave his oath without compulsion, and therefore ought to fulfill the same. I do therefore thinke fitt and order that the said one Preist dos remove out of Edinburgh within three weeks after the date hereof, and live conform to his oath.—(Signed) GEORGE MONCK."

The Incorporation, having at last gained their end, generously restored back to Preist his forfeited privileges, though they refused a request that he might remain unmoved until Whitsunday 1655.

Thanks to Monk, Preist was relegated back to the Canongate, and does not seem to have again troubled the Calling.

Thus ends a sequence of simple events which, besides bringing the Craft in opposition to many persons whose enmity at such a critical period it was perilous to incur, also caused them no end of trouble, and, for those days, a considerable amount of expense.

If there is any pleasantry at all in the story, it certainly lies in connection with the latter. The Surgeons' accounts show it to have involved the outlay of comparatively large sums of money. Between 1st September and 13th December 1654 it cost the Calling £159 Scots. The details of another £60 Scots, which were spent in one week in the year preceding, furnish many items both instructive and entertaining, but unfortunately the shadow of ambiguity rests upon them.

The items alluded to are as follows:—

4th April 1653.—Spent in Thomas Mesent's house upon
ane Friday at night in relation to Robert Preist's
business

£03 03 00

Upon the Saturday thereafter in the morning before going to Dalkeith	£02 02 00
For our Dalkeith voyage for seven horses	12 00 00
For our dinner	18 02 00
At our return at Robert M'Kean's house	05 07 00
Upon the Friday morning with Robert Anderson	00 15 00
Given to Anna Kerr	06 00 00
More for thanking some particular persons	08 12 00
At a consultation with the Judge Advocate	17 05 00



FIG. 1. Document signed by ten members of the Surgeon-Barber Craft in 1621, engaging that they would not haunt taverns.

Whatever may be the true explanation of these entries, there exists in the College archives, however, sufficient evidence to exonerate the Surgeons from any suspicions of immoderate bacchanalian proclivities. An insignificant scrap of paper, too modest in appearance to be called a document, bears simple yet eloquent testimony of their earnest aspiration to soar above the customs of an easy-going morality. Penned in a careless way, certainly not at the hands of a scrivener, and signed by ten members of the Craft, this unique epistle runs :—

“ We undersubscriband for the weill and profite of ourselves Our awin credit and ye respect of our profession and for uther good considerations moving us Be the tenour heirof of our awin proper motive Bands and Obleias Us ilk ane for our awin parts. That we shall nowayes hant nor be fund in Tavern or Taverne house within ye burgh of Edinburgh fra ye dait of thir presents To ye xxx day of August 1622 yeirs. Except allanerlie (only) at dinner and supper Under the pane of payment to our box of ye sowme of fyve pundis totius quotius for ye weill of ye craft. Anent is our hand at Edinburgh the 30th day of August 1621 ” (fig. 1).

No matter what may have been the particular motive of the Barber-Surgeons in uniting themselves in such a laudable purpose, it is probable that, in a small city such as Edinburgh then was, their example would do more towards the improvement of social life than had been effected by the then recent legislation of the Scottish Parliament.

IV.

THE "STAYT"¹ OF CRIEFF—A BRONZE-AGE BURIAL SITE.
By MUNGO HEADRICK.

Quite recently² there came into the possession of the National Museum of Antiquities, Edinburgh, an urn of dark colour. The urn is of the food-vessel type (fig. 1), stands $4\frac{5}{8}$ inches in height, expands



Fig. 1. Urn of Food-vessel Type found in a Cist at Broich, near Crieff.

from a width of $5\frac{1}{4}$ inches at the mouth to a width of $5\frac{3}{4}$ inches at the shoulder, and thence contracts to a base of about 3 inches in diameter. Three slightly raised mouldings encircle it: at the lip, at the shoulder,

¹ Stayt = *Stede, Steid*, a place. "Then aucht the clerk to title the court, makand mentioun of the day yeir and *steid* quhan and quhair the court is haldin" (Balfour's *Pract.*, p. 38). The word is rendered "Stayt" from a notarial instrument expedé in 1475 (*Hist. MSS. Commission, 3rd Report*, p. xxiv, and App. p. 418), but other renderings have been given, e.g. *Scait, Skait, Skath* (*ibid.*, 7th Report, App., pp. 711-715).

² *Proceedings*, vol. xlv. p. 374.

and midway between. The shoulder moulding is ornamented by a double row of triangular punctulations and the other two by a single row of similar markings. The vessel is encircled between the central moulding and that on the shoulder, as well as on the inward sloping rim, by two transverse lines formed by the imprint of a twisted cord of two strands on the clay when soft. The transverse lines are not continuous, being interrupted in three places by a number of vertical lines formed in the same way as the transverse lines. Hanging from the shoulder is a series of impinging and inverted chevrons each filled in with like markings, drawn on the clay with a pointed tool. The urn, it is stated, had been found in a cist near Crieff in 1860. No more definite indication of the locality of the find is given, and the purpose of this paper is (first) to identify the mound in which the cist was exposed, and (second) to show that the mound had been in use as a place of justice when courts were held in the open air, down to a date near the end of the seventeenth century.

Prior to the year 1860 there stood on the lands of Broich, near Crieff, a low mound some 12 yards in diameter, which had at one time been surrounded by a wall of earth and stone. The site is indicated on the O.S. map at a point some 330 yards to the east of the entrance to Broich, on the south side of the road leading from Crieff towards Highlandman, and on the field side of the narrow belting of wood which skirts the road at that part. In the month of November 1860 the mound was levelled and ploughed over, and in the course of the operations two cists containing human remains were exposed, along with an urn of clay the measurement of which is given as 5 inches in height by 5 inches across the mouth. The finds were duly recorded at the time in the local press,¹ from which the following particulars are taken :—

17th November 1860.—“ One of the urns (cists ?) was simply composed of blue whinstone sides, the ends of red sandstone. These were

¹ *Strathearn Herald*, 17th and 24th November and 8th December 1860.

laid roughly together. The bones deposited were very much decomposed and broken, so much so that, had it not been for the presence of a pretty complete heel-bone, ulna, rib, etc., it would have been difficult to determine whether they were human remains or not. Some of these are crumbled to an almost impalpable white powder, and others appear to have been subjected to the action of fire. . . . The second deposit of bones was less formal—resting in the solid soil, and covered over with three rough slabs of no great size. . . . There is an immense boulder, weighing over a ton, which has not yet been displaced, but which is supposed to cover the upper slab of a cist."

24th November 1860.—"The huge stone, weighing close on two tons, being removed, disclosed a sandstone slab 5 feet 3 inches by 2 feet 2 inches, and about 1 (foot?) thick. Beneath this slab was another of those little cists or cinerary boxes measuring 2 feet 6 inches by 1 foot 6 inches, and about 10 inches deep, and composed of rough slabs. The bones found in this were in that abnormal pulverised state which we discussed last week. . . . An interesting vase, somewhat in the style of a Etrurian vessel, has been found in the last discovered grave. It is globular; stands 5 inches high, with a mouth about 5 inches across and is made of clay hardened by fire. There are rude attempts at floriated decoration round the vase, something in the 'herring-bone' pattern, and evidently done by pats of a trowel or what served the maker for one. This relic is now in the possession of A. Monteath, Esq., of Broich."

8th December 1860.—"We will now take a glance at the interior of the *quasi* tomb before it was touched by the intruders' feet. The surface of the bottom was smoothly laid with clay. . . . An urn lay on its side . . . and beside it lay a small heap of (it is supposed) cremated human bones. . . . Within the urn was a quantity of mould, supposed by some to be ashes of calcined bones. The mould was of a dark brown colour, and had a rich, soft, velvety feel."

It will be seen that the urn now in the National Museum corresponds

with that taken out of this mound; and as there is no record of any other urn having been found in a cist near Crieff in 1860, the conclusion is irresistible that it is the same.

It was on this mound that the court of the Earls of Strathearn and the stewards or seneschals was held, when such courts were held in the open. From the *Statistical Account* we learn that the old Tolbooth in Crieff was erected in 1665 for the accommodation of the steward's court, "which from this period ceased to be held in the open air." It is known that some forty volumes of records of the steward's court were stored in the Tolbooth, and that they were ruthlessly destroyed by soldiery quartered there in 1798, who used the tomes for fuel! But there are several documents extant relating to the court. When Robert the High Steward of Scotland, nephew of David II. (afterwards Robert II.), was Earl of Strathearn, he held a court "apud Creffe" on 8th May 1358,¹ and this appears to be the first record of the court which we have. In the Abercairny papers which have been examined by the Historical MSS. Commission are several documents containing the records of these courts, and amongst them is a notarial instrument in the vernacular expedite at the "Stayt" in 1475.² The office of steward, which was at first by appointment, eventually became hereditary in the family of Drummond till heritable jurisdictions were abolished in 1747. It is a popular mistake to suppose that these courts were principally concerned with hangings. They had indeed power of life and death, but on the other hand they had a wide jurisdiction in regard to civil matters, and from documents that have come down to us³ we see

¹ *Charters of Inchaffray Abbey*, Scot. Hist. Soc., vol. lvi. pp. 126 and 230.

² *Hist. MSS. Com., 3rd Report*, p. xxiv, and App., p. 418.

³ A full record of the proceedings at feudal courts held on the Hund-hill of Longforgrund (Longforgan) as far back as 1385 still exists. It is partly in the vernacular of the period contemporary with Barbour's *Bruce*, and shows the formal procedure of the court, with a final judgment. (*Hist. MSS. Com., 3rd Report*, App., p. 410.)

that practically the same officers as figured in the courts of the sovereign accompanied the holder of the court, and that in the proceedings there was a strict adherence to legal formalities. In addition to the steward and steward depute, the other officers were a judge (judex), a steward clerk, a deemster or doomster, a mair or officer of court, and a headsman or hangman, whose salary in 1741 was £27 Scots. In their proceedings the first duty appears to have been to "fence" the court, which was done by the officer repeating a formula forbidding anyone to interfere with the proceedings. Parties were sometimes represented by counsel (fore-speakers), as may be seen by reference to the notarial instrument of 1475 above mentioned, and the judgment of the court was given by the doomster. There was an official chair, apparently, as in a charter of lands by the Earl of Strathearn, in the fourteenth century, the chair of justice and the "place of doom" are reserved.¹ But there is a paucity of information regarding the superstructure itself, and the form, arrangement, and furnishings of the court; and this paucity is emphasised when we consider that the people of the remoter prehistoric age have left us something tangible in this urn, from which, and its associated remains, the archæologist is able to build up the history of the culture and civilisation of their era.

¹ *Hist. MSS. Com., 3rd Report*, p. xxiii, and App., p. 406.

MONDAY, 11th May 1914.

Mr R. DE CARDONNEL FINDLAY in the Chair.

A Ballot having been taken, the following were duly elected Fellows :—

Major JOHN MACRAE GILSTRAP of Eilan Donnan, Balimore, Otter Ferry, Argyleshire.

JOSEPH RORISON, 14 Castle Street, Kirkcudbright.

The following Donations to the Museum and Library were exhibited, and thanks voted to the Donors :—

(1) By Dr J. GRANT, F.S.A. Scot.

Melon-shaped Bead of blue vitreous paste, $\frac{3}{4}$ inch in diameter, found in an underground dwelling, Sandwick, Orkney.

Small penannular Brooch of copper, $\frac{3}{4}$ inch across, with circular discs at either termination, in one of which there remains a filling of red enamel; segment of a Ring of jet, plano-convex in section, $1\frac{1}{8}$ inches in diameter, found on an island in Walls, Orkney.

Small perforated Pebble from Stennis, Orkney.

(2) By G. F. BARBOUR of Bonskeid.

Two Implements of Bone; two Discs and a Whorl, all from Borenish Fort, Loch Tummel.

(3) By Messrs WILLIAM GREEN & SONS, Edinburgh, the Publishers.

Scottish Armorial Seals, by William Rae Macdonald. Edinburgh, 1904. 8vo.

(4) By JAMES BARRON, F.S.A. Scot., the Author.

The Northern Highlands in the Nineteenth Century. Newspaper Index and Annals. (From the *Inverness Courier*.) Vol. III., 1842-1856. Inverness, 1913. 4to.

(5) By JOHN HORNE STEVENSON, F.S.A. Scot., the Author.

Heraldry in Scotland, including a recension of the law and practice of Heraldry in Scotland, by the late George Seton. 2 vols. Glasgow, 1914. 4to.

The following Purchases acquired by the Purchase Committee during the session, from 1st December 1913 to 11th May 1914, were exhibited :—

Urn of Food-vessel type, several fragments of a beaker urn, some crowns of human teeth, portions of unburnt bone and a fragment of charcoal; all found in a cist at Edington Mill, Chirnside, Berwickshire. (See the previous communication by Mr Hewat Craw.)

Ornamented Stone Ball of granite, stone axe of diorite, stone axe of greenstone, and polished axe of porphyritic stone, ten arrowheads of flint and three whorls, all from Fyvie, Aberdeenshire.

Provincial-Roman Fibula of bronze, found near Peebles.

Arrowhead of flint, found at Oxnam Row, parish of Oxnam, Roxburghshire.

Bronze Socketed Axe, found in 1899 on the farm of South Friarton, St Martin's, Perthshire.

Handled Jar of buff ware, 6½ inches in height, found at junction of Fort Street and South Harbour Street, Ayr, 4th February 1914.

Trade Tokens :—Edinburgh Halfpenny, 1791 (Atkins No. 25); Edinburgh Halfpenny, 1791 (Atkins No. 28); 2 Edinburgh Farthings (Atkins Nos. 98 and 93); Edinburgh Halfpenny (Atkins No. 35); Edinburgh Farthing (Atkins No. 115); Edinburgh Halfpenny (Atkins No. 42); two Farthings, possibly Edinburgh.

Coins :—Hoard of Roman Copper Coins, 119 in number, found at Balgreggan Quarry, Stoneykirk, 29th October 1913; twenty-two coins, chiefly Edwardian, reserved from hoard found at Craigengillan, parish of Carsphairn, 4th November 1914; seven coins of the reigns of James V. and Mary, reserved from hoard found at Fort Street,

Ayr, February 1914. (See the subsequent communication by Dr George Macdonald.)

The following Books for the Library :—

Præhistorische Zeitschrift, Vol. V., Parts 1 and 2 ; The Scottish Monasteries of Old, by Michael Barrett, O.S.B. ; Der germanische Goldreichtum in der Bronzezeit, by Professor Dr Gustav Kossinna ; Royal Commission on Ancient and Historical Monuments, Wales, etc., II. and III., Radnor and Flint ; Royal Commission on Historical Monuments (England), Buckinghamshire (North), Vol. II. ; Bologne villanovienne et étrusque, by Albert Grenier ; The Archaeology of the Anglo-Saxon Settlements, by E. Thurlow Leeds ; Die Bilderschüsseln der ostgallischen Sigillata-Manufakturen, by E. Fölzer ; The Bronze Age in Ireland, by George Coffey ; Borrowstounness and District, by Thomas James Salmon ; An Introduction to English Church Architecture from the Eleventh to the Sixteenth Century, by Francis Bond ; The Book of the Duffs, compiled by Alistair and Henrietta Tayler ; Rome of the Pilgrims and Martyrs, by Ethel Ross Barker ; Die Gräberfelder in der Umgebung von Bellinzona Kt. Tessin, by R. Ulrich ; The Journal of Egyptian Archaeology ; Terra-Sigillata-Gefässe gefunden im Grossherzogtum Baden, by Professor Dr O. Fritsch ; Les Perrons de la Wallonie et les Market Crosses de l'Ecosse, by Le Comte Goblet-D'Alviella ; The Book of the Cross Kirk, Peebles, by Dr Gunn ; The Origin and History of Irish Names of Places, by P. W. Joyce, LL.D. ; Materialien zur römisch-germanischen Keramik herausgegeben von der römisch-germanischen Kommission des Kaiserlichen Archäologischen Instituts Frankfurt ; Meisterstücke im Museum Vaterländischer Altertümer zu Stockholm, by Oscar Montelius ; Ancient Town-Planning, by F. Haverfield ; Religious Art in France, Thirteenth Century, by Emile Mâle.

The following Communications were read :—

I.

ACCOUNT OF THE EXCAVATION OF TWO HUT-CIRCLES OF THE
BRONZE AGE, IN THE PARISH OF MUIRKIRK, AYRSHIRE.
By J. G. A. BAIRD, F.S.A. Scot.

The parish of Muirkirk is almost entirely moorland, cultivation being confined to the low-lying land in the valleys of the Waters of Ayr and Greenock. Hence, there is in this parish a considerable number of remains of more or less ancient constructions which have escaped demolition by agricultural operations. According to a charter of the monks of Melrose, the district was covered by forest in the twelfth century, chiefly birch, to judge by the remains in the mosses, and was the haunt of wolf and red deer, as testified by horn and bone. Both stone and bronze implements have been found, but no thorough examination of the remains referred to above has been made, so far as I know. Last autumn, however, a beginning was made, and several investigations were carried out by Mr Fairbairn, head keeper on the Wellwood estate, and myself. The former had long been anxious to examine a spot which seemed to show traces of man's handiwork. This was a grassy patch among the heather, with a few stones appearing here and there, suggesting the site of a cairn, which examination proved to be the remains of a hut-circle (fig. 1). The circle is situated on a gentle slope lying west to east at right angles to the general slope of the hill, which is south and north, and about 900 feet above sea-level. It is at a considerable distance from any existing spring, but a small runnel passes close by, which probably maintained a constant supply of water before the hill was

drained. Removal of turf and heather exposed a rough pavement of water-worn stones of all shapes, mostly of a weight which a man could carry, but one considerable boulder stands at the entrance. There was also removed a large quantity of small stones, and debris, which no doubt filled the spaces between the uneven stones and made a more or less level floor. About 6 feet from the entrance, and 3 feet

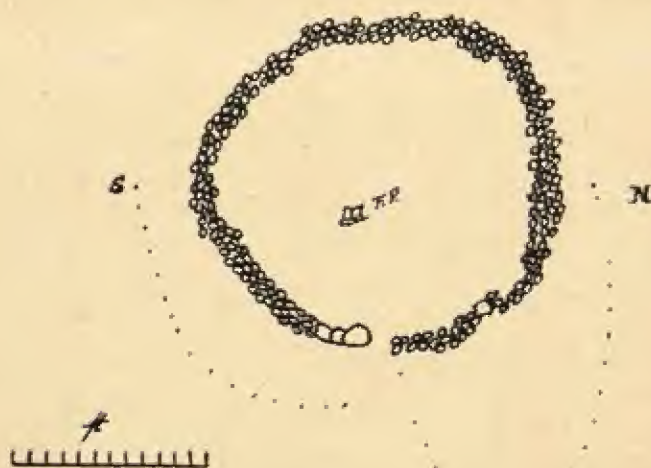


Fig. 1. Hut-circle No. 1, at Muirkirk.

from the centre of the circle, was found a fireplace paved with flat stones, with others set on edge to form a back on the side next the doorway. These stones and the earth in their interstices showed signs of fire when laid bare. The wall of the hut appears to have been about 2 feet high, enclosing a circular space from 18 feet to 19 feet in diameter. The pavement of the eastern half-circle is continued beyond the wall to a distance of 4 feet to 6 feet, extending to 12 feet beyond and on the north of the entrance (shown by dotted line on plan), but the latter part of the pavement may be the remains of a

screen or shelter for the entrance. The relics discovered were few in number, but of great archaeological value, being fragments of bronze-age pottery, which were found near the fireplace, and testify to the antiquity of these dwellings. Nothing was observed which threw any light upon the construction of the roof, nor have any tumuli been noticed in the neighbourhood of the circle. The choice of

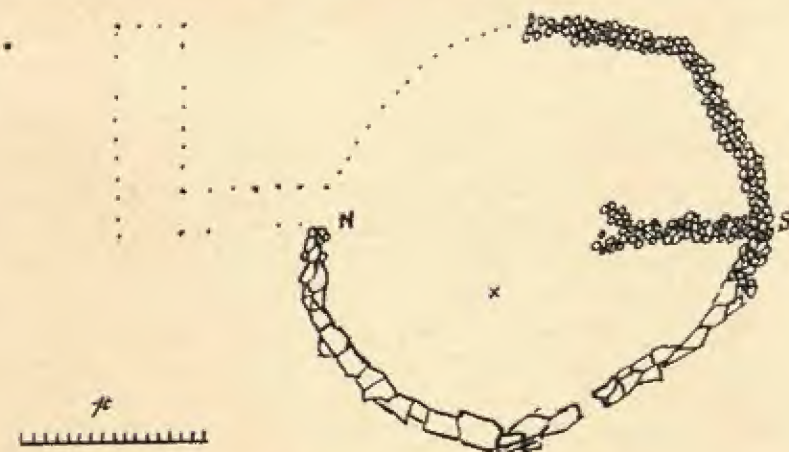


Fig. 2. Hut-circle No. 2, at Muirkirk.

site, on the north side of a hill which rises about 500 feet above it, with no shelter from the prevailing wind, and in a stormy district, seems somewhat strange. But in the long course of years which have passed since the hut was built, the climate may have altered for the worse, and if the hills were covered with rough forest, it may be that the site presented advantages which are not now apparent.

The next hut-circle examined (fig. 2) is at a lower elevation, about 700 feet above sea-level, and on fairly flat ground which occurs on a northern slope. The site is a deposit of sand and gravel. This

structure is not so well preserved as the first; the pavement is incomplete, and part of the wall has disappeared. For this, cultivation at some former period and a stone dyke which runs close by may account. The internal diameters are 34 feet and 38 feet. The wall of the western half-circle has a foundation of heavy stones forming the core of a bank about 2 feet in height and 3 feet wide at the base. From south to east the wall is less substantial, and from east to north it has almost disappeared. To judge from present appearance, the circle has probably been divided into four quarters, three of which have each an arrangement of stones like a hearth, while the fourth, which seems to have been unpaved, may have sheltered the domestic animals. The entrance is from the southwest. On the northern side there appears to have been a small annexe, the pavement of which remains, and is shown by a dotted line on the plan. It had no wall. The relics of occupation found among the debris under the turf consisted of some fragments of coarse glazed pottery, two rough pieces of flint, and some charcoal. No tumuli have been noticed in the neighbourhood of this circle, but for that cultivation may account. Nor is there any spring close at hand, but there is running water about 200 yards away.

But the most important discovery remains to be told. In the centre of the circle a circular pit about 3 feet deep and 4 feet in diameter was found, filled with stones such as had been used for pavement. The stones, some of which, with the soil in which they lay, were blackened as if by fire, were removed, and the pit further excavated to a depth of about 6 feet in all without any result, except that between 4 feet and 5 feet below the surface, and underneath the stones, a very thin layer of carbonised vegetable matter appeared, the remains perhaps of a primitive carpet of twigs or some other convenient material. At the bottom, the fragments of an urn of the bronze age were found, flattened out by the weight above them, and decayed by damp. Nothing else was observed, except that

about 2 feet below the surface a stone about the size of a brick was found, just over the urn, as if to mark the spot (indicated by a small cross on the plan, fig. 2), though, of course, its position may have been quite fortuitous.

The facts given above present an enigma which can only be solved, if ever, after much further investigation of hut-circles. Meanwhile,

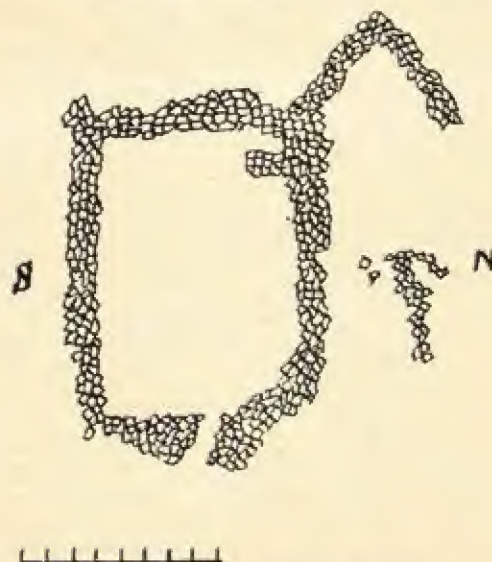


Fig. 3. Rectangular Hut, at Muirkirk.

the occupation of the site and its peculiar feature may form an interesting subject of speculation.

The third construction explored (fig. 3) proved to be a rectangular hut, 12 feet by 7 feet, with walls about 2 feet in height, well paved with flat stones, and with a fireplace in the north-west corner. The entrance, a foot wide, passing aslant through the eastern wall, is clearly defined. The hut lies east and west, 1300 feet above sea-level, just below a steep southern slope rising about 200 feet above it, and

on an almost level bed of clay. The relics found here were fragments of coarse pottery, glazed and unglazed. At the north-west corner there is a curious arrangement of stones laid on the surface of the ground, forming with the wall of the hut a sort of three-sided enclosure, and within a few feet lie more stones, evidently laid down by hand. This hut seems to be an advance from the hut-circle. The walls are similar to those of the latter, but the paving much superior, and the fireplace is placed in a more suitable position. For what reason the hut was constructed at such a height is far from clear. A summer sheiling would hardly be necessary in the locality; there are no signs of cultivation, yet it was undoubtedly made for and inhabited by human beings. Judging from the thickness of the overlying turf, it must have been abandoned centuries ago.

The last excavation brought to completion revealed an ancient kiln with flue, in good preservation. It is situated on the edge of a cleuch, placed there to facilitate the construction of the flue, which enters the kiln at the bottom. The shape of the kiln is that of an inverted truncated cone. Its diameter at the top is 6 feet 6 inches, and at the bottom 3 feet; its depth 7 feet 6 inches. It is faced with stone inside, and the bottom is neatly paved with thin flat stones. The flue is 9 feet long, 2 feet high, and 18 inches wide, built with stones and paved like the kiln; its mouth, opening into the cleuch, is formed of three heavy stones. The flue was full of ashes, apparently of burnt coal. On a level with the top of the kiln and with one common wall are the remains of a small hut, 7 feet by 6 feet, with low walls and rough pavement. In vol. vii. p. 273, of the *Proceedings* of the Society a similar pit is figured and described, which was said by a gillie to have been used for cooking deer in the olden time. But this pit, found in Strathnaver, appears to be at not more than 600 feet above sea-level, and not beyond the limits of cultivation. Moreover, the situation is not defined; nor is it clear that a thorough examination was made. The two pits are so much alike that a common

use might be suspected. What was this use? The kiln is situated on the edge of a meadow which has been cultivated, and about 100 yards from a small homestead, now in ruins, which may occupy the site of a former building of the same nature. The climate is apt to be wet, and harvests must have been precarious. The land was the property of the monks of Mauchline, doubtless good farmers, and the most likely conclusion is that the kiln was used for drying corn in a wet season. The adjoining hut may have been a shed for subsequent treatment. As to cooking deer, it is difficult to see the use of constructing an elaborate pit for the purpose, which might involve the carriage of the carcase for a considerable distance; and it may be added that shepherds and gillies are unsafe guides as regards ancient remains.

NOTE ON THE POTTERY FOUND. BY A. O. CURLE,
Director of the Museum.

The fragments of pottery found in the first hut-circle are parts of one side of a rather straight-sided beaker, showing no portion of either the lip or the base. The largest fragment (fig. 4) measures some $3\frac{1}{2}$ inches by 3 inches, and has a thickness of $\frac{5}{16}$ inch. The curve of the segment is too flat to afford an accurate index to the measure of the circumference of the original vessel. The ornamentation consists of three rows of short vertical impressions, each separated by two horizontal lines; beneath this group, at the upper and lower edges of a broader zone of unornamented surface, occurs a row of oblique markings placed convergently; and below the lower row is a repetition of the horizontal lines and vertical impressions.

The pottery found in the pit within the second hut-circle consists of the greater part, though in many pieces, of a tall, flat-bottomed vessel with an ovoid body and a neck slightly constricted above the shoulder. There is not a complete section remaining, but the largest



Fig. 4. Fragment of a Beaker found in Hut-circle No. 1.



Fig. 5. Section and View of Fragment of Pottery from the Pit in Hut-circle No. 23.

portion, with the addition of a small segment of the base, measures $6\frac{7}{8}$ inches, and the original height of the vessel has not greatly exceeded this. The interior diameter of the mouth has been approximately $4\frac{1}{8}$ inches, and the thickness of the wall $\frac{7}{16}$ inch. Though the form is distinctly that of a beaker urn, late in the series of that class of bronze-age ceramic, the decoration is not analogous. On the exterior surface from the lip downwards there extend for about an inch a series of parallel oblique impressions of a twisted cord; beneath this, encircling the neck, is a group of parallel horizontal rows of oblong markings made with a small punch; around the upper part of the body runs a single band of chevron markings placed horizontally, while, extending downwards from this band almost to the base, are a series of vertical rows of similar impressions.

II.

ACCOUNT OF THE EXCAVATION OF THE EDWARDIAN CASTLE AT CASTLEDYKES, KIRKCUDBRIGHT. BY J. ROBISON, F.S.A. SCOT., KIRKCUDBRIGHT.

The first time the castle of Kirkcudbright is mentioned, so far as the public records are concerned, is in the year 1288, when John Comyn was the guardian of "the castle and lands which belonged to the King in Kirkcudbright." It is worthy of note that King Edward placed the castles of Kirkcudbright, Dumfries, and Wigtown for a number of years under the custody of a single governor. All three castles have disappeared, and it was only in 1911 that excavations, continued in 1912 and 1913, revealed the foundations and parts of the walls of Kirkcudbright Castle, showing clearly that it was a fortress of great importance.

Passing over the centuries, nothing whatever is related of the castle, so far as can be gleaned, the charter by James IV., of date 1509,

mentioning the lands by the name of Castlemains. In 1482 several burgesses of Kirkcudbright were prosecuted for having taken forcible possession of the castleward of Kirkcudbright. In a report by an English officer of the year 1566 it is mentioned that the inhabitants stood greatly in fear of the Dukes of Somerset and Northumberland. In an interesting extract sent to me by a London friend, it is stated that, among others, the lairds of Bombie and Lochinvar were, with their retainers, ordered to pass to Kirkcudbright to defend the town against the English, and, if necessary, to build a fort; which proves that the castle, even if it had not already completely disappeared, was useless for defensive purposes.

THE EXCAVATIONS.

During all this period an impenetrable silence surrounds the castle, and all that remained of it were the mounds and names Castledykes and Castlemains. An examination of the ground showed the vast strength of the site. The castle was surrounded by a deep moat, and on three sides of the castle field were deep ditches or dykes—hence the name Castledykes. On the remaining side it was protected by the sea. To the south and east were numerous ditches, which can be traced to the present day, and at the turnstile near the cricket field was a strong outwork, there being traces of similar mounds at the river corner and near the entrance to the football field. Whether the town fosse was in existence during the time of the War of Independence cannot be known, but in all probability it was, with the further defence of a rude wall of turf and stones. That fosse is still traceable, and is very distinctly marked from the corner of the Academy playground on towards the river. A few yards from the point mentioned at the Academy is Castlemains Cottage, in front of which is a large artificial mound, which is conjectured to have formed one of the outworks of the castle. The situation was strong by nature, and was rendered more so by art. The only approach from the town would be by way

of a road very near the present St Mary's Wynd, and thence along the gravel ridge to Castlemains. The original entrance to the castle, for a reason that will be afterwards shown, I conjecture to have been from the river front.

Towards the end of September 1911 permission was obtained from Captain Hope, R.N., of St Mary's Isle, to make excavations on the castle mound. The first day remains were found which effectually disposed of any idea that no castle ever stood there. Careful drawings were made, and the sites marked off. In September 1912 Captain Hope again generously gave permission to make excavations on an extended scale, and supplied the workmen for a week. A start was made at the sites of the previous excavations, and by the end of the first day one of the buttresses and a portion of wall, which afterwards turned out to be the entrance to the east tower, were uncovered. On the following day another buttress, in an excellent state of preservation, and a part of the circular wall were laid bare. The excavation of this tower was proceeded with, and in the course of the work two buttresses, almost complete, and a third one with few stones remaining, were brought to light. Meantime a deep trench was dug from the point of wall originally found, when, to the delight of all engaged in the work, the portcullis stone, in a beautiful state of preservation, was laid bare, along with a piece of wall of Netherlaw freestone. Undoubtedly the entrance to the castle had been found, but, on careful examination, it was ascertained to be of much later date than the masonry of the tower, over the foundations of which it appeared to have been built. A cross trench was made, but unfortunately the corresponding grooved stone was amissing. A further search, however, revealed the spring of another tower to the north. This also was laid bare, and revealed the interesting fact that it was provided with one buttress, which had originally been of the same dimensions as those of the first tower, and further strengthened in the centre with a double wall, forming a huge buttress about 20 feet long.

Further on a piece of straight wall succeeded the circle, and, after being lost for about two yards, a third tower of much smaller dimensions, but beautifully constructed, was discovered. It has been suggested, with much plausibility, that this tower contained a staircase giving access to the upper storeys of the towers and to the battlements. This tower had originally been connected with the north tower, and later on it was found that it also connected with the curtain wall leading to what was conjectured to have been the largest of the five towers, that facing the river front. This curtain wall was laid bare for 35 feet, and had, in all probability, been about 50 feet in extent before it connected with the river-front tower.

Turning now to the extent of the foundations discovered, it was found that the external walls gave an average height of about $2\frac{1}{2}$ feet, and were in an excellent state of preservation. It was resolved to excavate the inside of the east tower, so as to determine the actual dimensions. The wall of this tower was found to be 10 feet thick, with a diameter of $36\frac{1}{2}$ feet, the diameter of the interior being 16 feet. To the rear was found a portion of the curtain wall, 11 feet thick, and here a most interesting discovery was made. This was a passage in the thickness of the wall, the passage being paved with stones set in lime. A peculiarity of this curtain wall is that it is provided with a strong buttress, and, with the exception of Castle Swein in Argyllshire, this is the only known example in Scotland. The buttresses to the round towers, already described, are unique. The wall of the north tower is in parts 12 feet thick, due to the huge buttress in the centre, and the curtain wall connecting with the small tower is $8\frac{1}{2}$ feet thick. All that remained to be excavated were portions of the curtain walls on both sides of the buildings connecting with the two remaining towers, and these towers themselves.

The two large towers, with the portcullis gateway, present a frontage of about 85 feet, increased to over 97 feet if the third and smaller tower is taken into consideration. From the gateway the buildings

have extended back 154 feet, and from the drawbridge to the extreme river front the extent is 214 feet. From these figures it will be readily gathered that the castle was one of the largest. Indeed, it is much larger than a fortress like Caerlaverock, which is the best example of an Edwardian castle in Scotland, and the two large towers are equal to those of Bothwell Castle, which, till the excavations at Kirkcudbright, were recognised as the largest in Scotland.

In September 1913 a start was made with the excavation of the continuation of the west curtain wall, which was found to be entire with the exception of one break 10 feet wide. This turned out afterwards to have a significant bearing on the extent of the west tower. The contour of this mound was carefully noted before the ground was cut into, but before dealing with this point it will be better to give details as to the western curtain wall, which is, as already stated, 8½ feet thick. It terminates at a narrow point, and working round this was found the north wall of a passage, which again terminates at the inside of the curtain wall. Working across the front of the passage, the south wall was found, the passage proving to be 5 feet wide; and here a most interesting discovery was made, which was the finding of the bolt of the door which had stood there. It was in a very good state of preservation. The line was continued, and it was found that the southern curtain wall also tapered off to a comparatively narrow point. This curtain wall was excavated on the outside, and was found to have a break in it at the same distance from the centre of the passage as the break already noted in the west curtain wall. On the other side of this break, although all masonry had disappeared, the line of the wall could easily be traced. A trench was next cut on the inside of the curtain wall, but the faced stone had disappeared, with the exception of one large stone, which afterwards turned out to abut on the entrance to the south tower. Along the whole of the inner line of the southern curtain wall was found a thick layer of clay,

no doubt the floor of the apartments abutting on the wall. This south curtain wall was found to be 9 feet 6 inches thick.

Attention was then directed to the large mound at the river front, on which was conjectured to have stood the largest tower of all. A series of trenches was cut on the outside, and although there was abundant evidence of building material, still not one faced stone was found. Fortunately the despoilers had not disturbed, at least to any extent, the bed of the outside course, and this was easy to follow. The mass of packing stones continued right round the front, and where lost the lime bed proved an invaluable guide. The trenches were continued on the inside, and here it was found that the stones had almost entirely disappeared; but again the lime beds were strongly in evidence, indeed more so than in any other part of the building. There was, however, a space of 5 feet where there was not the slightest trace of stone or lime, and this proved to be in continuation of the passage which had already been discovered on the outside, and where, in addition to the bolt of the door, part of a spiral staircase was found. The passage had thus extended right across the tower from the inside to the angles formed by the west and south curtain walls. The conclusion came to seemed irresistible, that the outer and inner faces of this tower formed one huge buttress, with the passage in the centre, and that this buttress rose to the height of the passage, at the inner end of which would be a spiral staircase to the upper rooms and battlements. Measurements were made, which showed the tower to have had a diameter of 44 feet. When it is remembered that the towers uncovered the previous year had each a diameter of 36 feet 6 inches, and that they were equal in magnitude to those of Bothwell Castle, hitherto held to have been the largest in Scotland, some idea of its strength may be gathered, and also from the fact that the largest towers at Caerlaverock are only 26 feet in diameter.

The next operation was the excavation of the inside face of the west curtain wall, which was exposed the whole way to its junction with

the small tower at the rear of the north tower; and some interesting discoveries were made here in the way of pottery, notably the two masks subsequently referred to. The only remaining portions to excavate were the south tower and the east curtain wall, and a start was made with the former. Several trenches were cut into the mound, but for a considerable time nothing but masses of small stones and lime could be got, the walls all round having apparently disappeared. At length a small portion, about 2 feet in length, of the inner wall was laid bare, and was found to correspond with the inner wall of the east tower, thus solving the problem. It was of the same dimensions as those of the east tower, but, unlike it, it had not been provided with buttresses. Working round this small piece of inner face, the entrance to the tower was found, with one of the socket stones lying in position.

The only remaining part to put on the plan was the east curtain wall, and a considerable length was found. At its junction with the south tower another interesting discovery was made. When the workman reached the end of the wall his spade suddenly dipped into a hollow which, on excavation, proved to be a small chamber 4 feet square and 4 feet deep, right in the centre of the tower; but what its purpose was I cannot say. Only one question remained to be solved, and that was the discrepancy in the width of the east curtain wall, which is 11 feet wide at the rear of the east tower and only 7 feet 6 inches at its junction with the south tower. The explanation was found at the rear of the east tower, where, on the inside, the wall took a bend inwards.

The net result of the excavations has been that the whole ground-plan (fig. 1) of one of the most important Scottish mediæval fortresses has been laid bare. When regard is had to the defences on the outskirts, still to be traced in the deep ditches in the neighbouring fields, the conclusion must be come to that it was a formidable pile, and practically impregnable. The defences of the outer bailey have disappeared, but I presume they would be on the stockade principle,

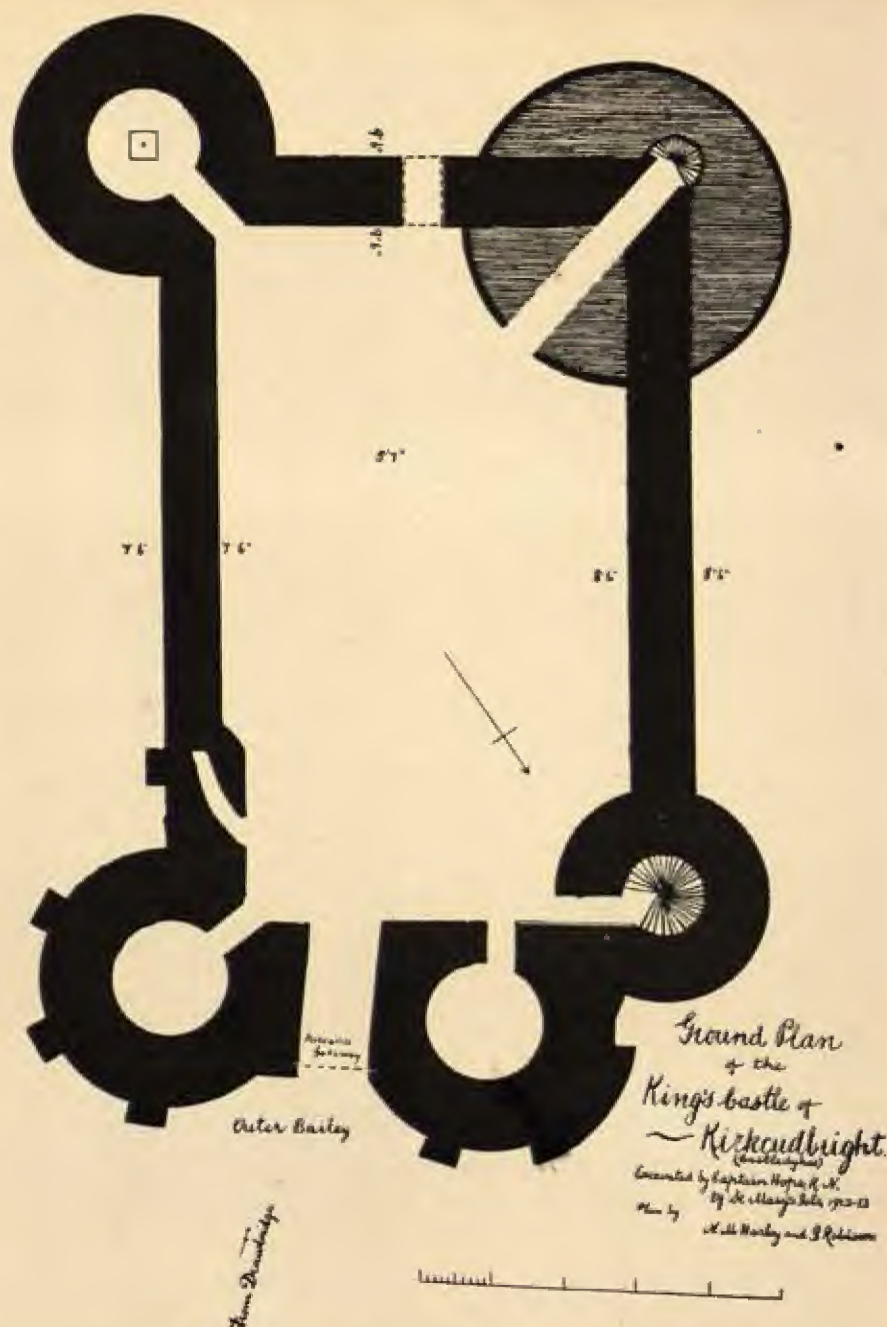


Fig. 1. Ground Plan of the Edwardian Castle, Kirkcudbright.

and if so, it is natural that no trace can now be got of them. Neither is there any trace of the drawbridge, although excavations in the moat at this point might reveal traces of supports. Another important discovery would be that of the well, which I conjecture to have been immediately behind the north tower; but probably this may also be got at some future time, and no doubt interesting relics will be found in its depths.

• The following are the dimensions of the building, and they form an interesting comparison with Caerlaverock :—

	Ft.	Ins.
Length of building, including outer bailey	214	0
Length of building, excluding outer bailey	154	0
Width of building over portcullis towers and entrance gateway	85	0
Width of building over portcullis towers and entrance gateway, including small tower to the rear of the north tower .	97	0
Width over west and south towers	107	0
Diameter of north, east, and south towers	36	6
Diameter of west tower	44	0

The dimensions of Caerlaverock Castle are :—

Width at entrance towers and gateway	64	0
Length along sides of triangle *	152	0
Length on straight	141	0
Diameter of largest towers	26	0
Width at base of triangle	171	0

The ancient entrance is said to have been 11 feet inwards from the present entrance, making the original length, on the straight, 130 feet. It will be thus seen that the size of the King's Castle of Kirkcudbright compares very favourably with that of Caerlaverock Castle.

The present castle of Kirkcudbright was completed by Sir Thomas M'Lellan, father of the first Lord Kirkcudbright, in 1582, and it is very significant indeed that, five years previous to this, on 19th March 1577, Sir Thomas received a grant of the Castledykes from the burgh.

There can be little doubt that the local tradition that the present castle was partly built from the ruins of the ancient King's Castle is correct. The burgh must have resumed possession of the lands, and they were not finally alienated till the beginning of the nineteenth century, when the burgh exchanged these lands, reserving a right-of-way through them, for the lands bordering the river to the north of the railway station—Stirling Acres, Milnfats, Milncroft, and Claycroft—belonging to the Earl of Selkirk. Regarding the extent of the castle lands, it is difficult to state what it was, but, roughly speaking, it would include the ground between the town and a line drawn from Great Cross to about the head of the Sandside Bay.

NOTES ON RELICS RECOVERED DURING THE EXCAVATION.

BY ALEXANDER O. CURLE, *Director of the Museum.*

The relics recovered during the course of the excavations described above are not very numerous, and for the most part consist of sherds of pottery, much broken, few pieces of which lend themselves to even partial reconstruction. They represent vessels of two classes—the glazed pitchers or jugs for holding liquids, and the unglazed, buff-coloured pots used in cooking. As the glaze is in great measure dependent on the colour of the clay out of which the vessel has been formed, the actual shades of colour are not of much importance, but the occurrence here may be noted of mottled green and yellow ware, dark green, brown, and black.

No vessel was capable of sufficient reconstruction for anything to be said about the shapes, but certain features are observable from the fragments which indicate a late thirteenth or early fourteenth century date for their manufacture.

The decoration has been largely produced by applied ornament. One piece of mottled green ware bears a wavy fillet, probably placed vertically on the vessel; a sherd of a hard, "tinkling" grey body covered with a brown glaze is crossed obliquely with a similar applied

fillet; another small fragment of reddish ware covered with a brown glaze has placed vertically upon it a fillet with a toothed or notched surface, while the field is further decorated with small squarish impressions closely placed in parallel rows. There are, of a different fashion, several pieces which appear to have had round panels treated in a *champ-levé* style, from which rise groups of small rings each enclosing a central boss.

• One small fragment is of a character of which there appears to be no previous record in Scotland. It is of thin buff ware, very light in weight and smooth in texture, and has been divided by narrow bands into compartments of green, buff, and orange colour, not applied in the form of a glaze. This piece of pot may be compared with a jug in the Guildhall Museum, London. In form that vessel is somewhat cylindrical above a deep, slightly expanded base, and has a large, narrow spout with a double ogee curve in profile. It is decorated with bands of colour, green and orange, outlined and diapered with darker colour, probably black, with a leaf-shaped ornament in the centre of a panel on each side, and, at the base of the handle, an ornament resembling a reversed *fleur-de-lis* in brown colour. The jug, which was found in Bishopsgate Street, measures $11\frac{3}{4}$ inches in height, $3\frac{3}{4}$ inches in diameter at base, and 4 inches at the mouth.¹ It is attributed to the thirteenth or fourteenth century. The peculiar form of the spout appears on another fragment from Castledykes, a spout of buff ware partially coated with a green glaze. A similar spout is to be seen on a pitcher in the Willet Collection at Brighton, illustrated in Professor Church's handbook, and attributed by him to the fourteenth century.

There is a fragment (fig. 2) bearing in relief the greater part of a figure of a circular brooch, or buckle, and pin, having slight equidistant prominences on the circle. The brooch measures about $2\frac{1}{4}$ inches in diameter. In the Grey Collection, preserved in the Manchester Art

¹ *Catalogue, Guildhall Museum*, 1908, pt. lxxi. 2.

Gallery, is a vase of light-coloured clay, $10\frac{3}{4}$ inches in height, imperfect, and covered with an olive-green mottled glaze. From the bulge at the centre, where it has a diameter of $5\frac{3}{4}$ inches, it diminishes rapidly upwards and downwards, and finishes in the latter direction with a rather flat base, $5\frac{1}{2}$ inches in diameter. Above and below the centre it is encircled respectively by slightly raised mouldings, and resting on the upper one is a representation in relief of a circular brooch, or



Fig. 2. Fragment of Pottery ornamented with a Brooch in relief

buckle, $2\frac{3}{8}$ inches in diameter, on the front of which are shown four equidistant roundels, possibly representing jewels. This vessel was found in London.

Characteristic of the pottery of the early fourteenth century are two bearded masks (fig. 3), portions of the mouths of pitchers, indicating a diameter over all of $4\frac{3}{8}$ inches and $4\frac{1}{2}$ inches respectively. The body of the vessels has been of a buff colour, and has been coated with a glaze of a yellowish-green tint mottled with orange. These masks were probably attached to the neck to act as side-handles.¹

¹ Burlington Fine Arts Club—*Catalogue of a Collection of Early English Earthenware*, 1913.

Another unusual fragment, covered with a green glaze, has been a spout representing the head of a bird. The duct through it



Fig. 3. Masks on fragments of the lips of two Earthenware Pitchers.

is only $\frac{1}{4}$ inch in diameter, and it has probably belonged to a puzzle jug of some description.

As a rule, the bases of the handles found display, at the point of

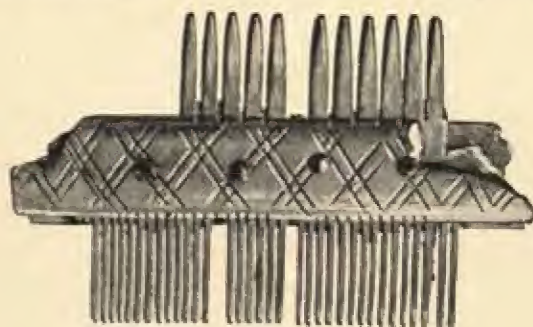


Fig. 4. Small-toothed Comb of Bone.

their junction with the body, deep leaf-shaped depressions; two large handles are fluted at their upper extremities, and another, circular in section, is fluted, or reeded, its whole length on the upper surface and sides. The bottoms of the vessels are slightly convex, and the basal edges are marked with slight finger depressions at intervals,

caused by the pulling down of the clay before the vessel was fired so as to form struts to counteract any instability due to the convexity of the bottom. No portion of a bottom shows these markings continuous.



Fig. 5. Iron Pick for dressing Stones.

The following are the only other relics of importance :—

A small-toothed comb (fig. 4), $3\frac{1}{2}$ inches long, formed of a number of sections of bone, with very narrow teeth at one end and broader teeth at the other, kept in position by two plates of bone crossing them at right angles on either side, and riveted



Fig. 6. Object of Brass, imperfect.

together. Incised lines on each of the plates form a diaper ornament along each side :

An iron knife dagger, imperfect at the point, tanged and triangular in section, $4\frac{1}{2}$ inches in extreme length :

A small iron pick (fig. 5), pointed to both ends, 6 inches long, such as might have been used for dressing stones :

An imperfect object of brass (fig. 6) of indeterminate use, $2\frac{1}{4}$ inches long, cut out of a flat plate, oval in outline, and with a ring for suspension at one end.

III.

NOTES ON THREE HOARDS OF COINS RECENTLY DISCOVERED IN THE SOUTH OF SCOTLAND. BY GEORGE MACDONALD, M.A., LL.D., CURATOR OF COINS.

I. A HOARD OF LATE ROMAN COINS FOUND IN
WIGTOWNSHIRE.

On 29th October 1913 an interesting discovery of Roman coins was made at Balgreggan Quarry, in the parish of Stoneykirk. Three labourers in the employment of the Wigtownshire County Council were engaged in stripping the turf and soil from the top of the rock, when their attention was attracted by one or two small objects of an unusual character lying amidst the loose earth. On being picked up and washed, these objects proved to be coins, which had been concealed in a small earthenware jug. As the result of a careful search, many more were recovered; 119 in all, along with some fragments of the jug, were voluntarily handed over to the Crown authorities. From the archaeological point of view, the hoard presented some novel features, so far as Scotland was concerned, and it was accordingly decided that it should be retained intact for the Museum. At a later date it transpired that, over and above the 119 that had been surrendered, there were a few—six, to be quite accurate—which had found their way into private hands. I was kindly allowed to examine these, in order that this record might be complete.

The fragments of pottery showed that the jug (fig. 1) had been made of whitish material, covered with a black or dark-brown slip. When complete, it had apparently been about $3\frac{1}{2}$ inches high. No part of the bottom remains; but enough of the rest has survived to enable the accompanying sectional sketch to be executed under Mr A. O. Curle's direction. The great majority of the coins were, like the vessel that had contained them, in exceedingly poor con-

dition. The task of identification was often far from easy, but in the end all save four were deciphered with practical certainty. The bulk of them were "second brass," but there were two examples of

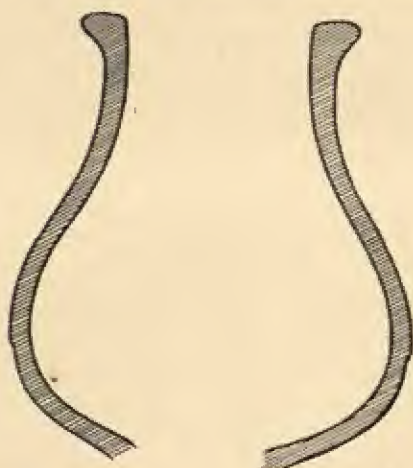


Fig 1. Section of the Jug in which the Coins were contained. (2.)

"first brass" and a small sprinkling of "third." The following list indicates their dates and distribution:—

Helena (306-328 A.D.)	1
Constantine the Great (306-337 A.D.)	2
Constantius (335-361 A.D.)	31
Constans (337-350 A.D.)	24
Magnentius (350-353 A.D.)	61
Decentius (351-353 A.D.)	2
Uncertain	4
	<hr/> 125

The oldest coin—if the term may be applied to what is now a mere fragment—is that assigned to Helena, mother of Constantine the Great; for, of the two coins of Constantine himself, one was struck after his death, while the other, which has for its obverse type a head

of the city of Constantinople, was certainly not issued before 330 A.D. On the other hand, it will be noted that nearly one-half of the pieces in the hoard bore the name of Magnentius. Clearly the centre of gravity cannot be far removed from the brief reign of that usurper. It is, of course, conceivable that some of the coins of Constantius may be later. Their relatively small number, however, points in the opposite direction, particularly when taken in connection with the absence of any examples of Gallus, appointed Cæsar in 351, or of Julian the Apostate, who succeeded him in 354. Probably, therefore, the latest pieces are the two coins of Decentius, and a small group of the coins of Magnentius, the inscriptions on which make allusion to the appointment of Decentius as Cæsar in 351.

These facts seem to justify the assumption that concealment took place in or about 354. Under normal circumstances it would be dangerous to draw so precise an inference as to the date of burial. But under the later Roman Empire the conditions of coinage were peculiar. Statistics of finds prove beyond question that the currency changed with extraordinary rapidity, and that it must have been rare indeed for common coins to continue in circulation for so long as twenty or thirty years. Despite spasmodic efforts at reform, the epoch was one of steadily progressive monetary deterioration. The quality of each emperor's coins was worse than that of those of his predecessor, with the result that Gresham's Law was in perpetual operation—the bad money driving out the good.

Hoard similar in composition, though much larger in size, have previously been found in England, as at Cobham Park in Kent (*Numismatic Chronicle*, 1885, p. 108 ff.), and more recently at Croydon (*ibid.*, 1905, p. 36 ff.). But this is the first properly authenticated account of anything of the sort from the north of Hadrian's Wall, and the question naturally arises whether it adds anything definite to our knowledge of the history of our country during the obscure period

to which it belongs. There may be a temptation to regard it as indicative of a Roman occupation of the Mull of Galloway about the middle of the fourth century of our era. But, while it would not be inconsistent with such an hypothesis, it forms far too slender a foundation to support it. Roman coins passed current in regions where the writ of the Roman Government never ran. Hoards have been found in India. In Germany, as Tacitus tells us in a well-known passage, the semi-civilised tribes beyond the frontier employed the Roman currency freely. Doubtless the same thing happened in Britain. The barrier that stretched from Tyne to Solway was not like the wall of a beleaguered city. In normal times traders would pass and repass it frequently, carrying with them a stock of imperial money, as well as a supply of easily transported merchandise like the earthenware jug in which the Balgreggan hoard was originally hidden away.

II. A HOARD OF EDWARD PENNIES FOUND IN KIRKCUDBRIGHTSHIRE.

On 4th November 1913 a large hoard of Edward pennies and contemporary pieces was discovered on the farm of Craigengillan, in the Parish of Carsphairn, by a lad named James W. M'Ilwraith, who was engaged in cleaning surface drains. The precise spot was a marshy hollow on the Goat Craig Hill, about a mile and a half from the present farmhouse, and the coins, which had been stored in an earthenware jug, were less than a foot below the surface. The jug was unfortunately broken into small pieces before M'Ilwraith noticed it, but the fragments recovered were sufficiently numerous to leave no doubt as to its shape and size. I am indebted to Mr A. O. Curle for the accompanying sketch (fig. 2), which shows that the type was one common in the fourteenth century.

The total number of coins collected by the original finder, and handed

over by him to the Exchequer, was 2209. A few others—thirteen in all—were subsequently picked up on the ground. I have had an



Fig. 2. Jug in which the Coins were contained. ($\frac{1}{4}$.)

opportunity of examining the whole 2222, with the result that I have been able to classify them as follows :—

SCOTTISH SINGLE LONG-CROSS PENNIES.

Alexander III	60
John Balliol	9
Robert Bruce	3

LONG-CROSS PENNY OF HENRY III.

Oxford	1
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PENNIES OF EDWARD I., II. (AND III.?).

(a) *English.*

London	1027
Canterbury	590
Durham (with ecclesiastical m.m.)	125
Durham (without ecclesiastical m.m.)	.	.	.	.	.	.	50
York (ecclesiastical)	.	.	.	.	.	.	3

York (ordinary)	46
Robert de Hadelie (Bury St Edmunds)	5
Bury St Edmunds	72
Bristol	47
Newcastle	26
Lincoln	16
Hull	8
Chester	6
Exeter	2
Berwick	44
Doubtful	2
(b) Irish.	
Dublin	24
Waterford	7

FOREIGN STERLINGS.

Various Mints	51
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The great majority of the Scottish coins were in good condition, and some interesting minor varieties were represented. The number retained for the Museum was fourteen. The Edward pennies (only one of which—a Waterford specimen, without the triangle—was retained) furnished no new evidence for the chronological arrangement of this difficult series, although there was abundant confirmation of most of the inferences drawn from the find made in 1911 at Blackhills (see *Proceedings*, xlv. p. 569 ff., and more particularly *Numismatic Chronicle*, 1913, pp. 57–118). It will be noted that the two hoards came from the same county, and that they are very similar in size and in composition, the main difference being that at Craigengillan the Scottish pieces were, roughly, twice as numerous, and the foreign sterlings, roughly, four times as numerous, as at Blackhills. The sterlings from Craigengillan, seven of which were added to the National Collection, included three of a class usually believed to have been struck by Edward III. in Aquitaine, with bust in profile, as well as four assigned by Chautard to Thomas de Bourlemont, Bishop of Toul from 1330 to 1353. If these attributions are

correct, the Craigengillan treasure must have been concealed subsequent to the year 1330. In discussing that from Blackhills I suggested 1320, or a year or two later, as the probable date of deposit. As it seems probable that both finds, as well as the one which came to light at Lochmaben in 1904 (see *Proceedings*, xxxix. p. 403 ff., and *Numismatic Chronicle*, 1905, p. 63 ff.), were hidden away more or less simultaneously, we are confronted by two alternatives. Either the coins were concealed during the troublous times that marked the early years of David II.'s reign, or their burial must be connected with the wars of 1322-23. If the latter be chosen, two consequences follow. The coins which Chautard assigns to Thomas de Bourlemont must belong, not to his time, but to that of Ferry IV., Duke of Lorraine (1312-28)—the view to which I inclined in my discussion of the Lochmaben find (*Numismatic Chronicle*, 1905, p. 82); and the earliest of the profile sterlings of Aquitaine must have been issued, not by Edward III., but by his predecessor Edward II.

III. A HOARD OF SIXTEENTH-CENTURY COINS FOUND AT AYR.

On 18th February 1914 a fairly large hoard of coins, chiefly sixteenth-century pieces, came to light at Ayr. They had apparently been concealed in a recess in the wall on the ground floor of an old building in High Street, which was being demolished to make way for a new Y.M.C.A. Institute, and their presence was first revealed to the workmen by the clink of metal among the falling debris. There was no trace of any bag or purse, or of any containing box or jar. So far as could be judged, the recess must have been five or six feet above the floor level. The coins, which numbered 692 in all, were handed over to the Crown authorities and were forwarded to the National Museum by the Exchequer for examination and report. For the most part they represented very common varieties, but a few

were retained for the coin cabinet on account of their good preservation. The following is a detailed list :—

A. SILVER.

MARY AND DARNLEY.

Ryals (1566)	3
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MARY.

Ryal (1507)	1
Two-thirds Ryal (1507)	1
One-third Ryal (1507)	1

JAMES VI.

Ryal (1507)	1
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B. BILLON.

JAMES IV.

Placks	107
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JAMES V.

Placks	53
Bawbees	54
Half-bawbees	3

MARY AND FRANCIS.

Non-sunts	37
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MARY.

Placks	108
Bawbees (Edinburgh Mint)	306
" (Stirling Mint)	6
Half-bawbees	11

692

IV.

NOTES ON CERTAIN STANDING STONES IN ARGYLLSHIRE.

By SHERIFF SHENNAN.

The object of these notes is to suggest a line of investigation in dealing with the numerous standing stones found in Scotland. The notes deal with two "ancient monuments" in Argyllshire.

1. *Duachy Standing Stones*.—During summer visits to Kilninver, on Loch Feochan, I observed four standing stones near Duachy. The position is 10 miles south-west of Oban and 6 miles north-east of Easdale, a short distance to the north of the Oban and Easdale road. The stones are not visible from the road. The precise position is as nearly as possible $5^{\circ} 33' 25''$ W. and $56^{\circ} 19' 35''$ N. In the vicinity there is an ancient fort, Losgann Lornach. The stones are marked in the Ordnance Survey map (6-inch scale, Argyllshire, sheet cx., S.W.) as "Stone Circle." I was unable to find any stones except the four which still stand, and these are so placed as to make it highly probable that there never was any "circle," but that the four stones form a complete scheme in themselves. Three of the stones are placed together, two standing upright, with one between them sloping at an angle of about 28° . This last stone, however, does not appear to have fallen from the upright position, but rather to have been placed in the position which it now occupies. It is so placed that the middle of the longitudinal upper surface forms a ridge pointing due east towards the fourth stone. This fourth stone is a standing stone inclining west at an angle of about 75° , and is distant 127 feet 6 inches from the foot of the ridge in the centre stone. Of the three stones at the west end, the two standing stones are so placed that their flat sides to the west are in line, the line passing over the spot where the ridge of the centre (reclining) stone leaves the ground. This line, however, does not run due north and south, but from about

28° west of north to about 28° east of south, *i.e.* from N.N.W. $\frac{1}{2}$ W. to S.S.E. $\frac{1}{2}$ E. It is thus not at right angles to the ridge of the reclining stone. If, however, the centre stone had originally been placed so that the ridge pointed to the top of the hill Meall Ailin—the highest point visible towards the east,—then its ridge would have been at right angles to the line of the three western stones.

The following rough diagram (fig. 1)—which it need hardly be said

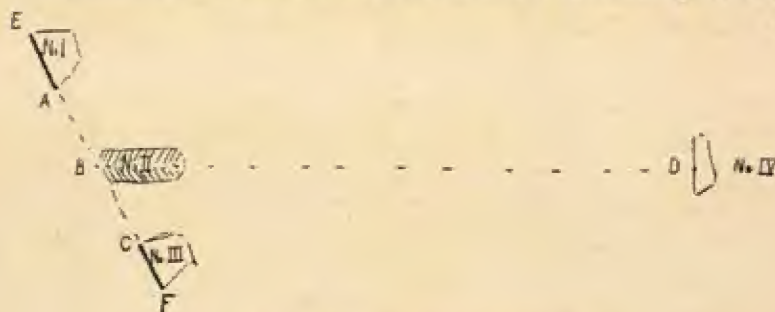


Fig. 1. Diagram showing positions of the Stones.

is not to scale—is given to show the measurements. B is the point where the ridge of the reclining stone leaves the ground. It is equidistant from points A and C—the nearest points of the standing stones No. I. and No. III.,—being 9 feet distant from each. The distance from B to D—the nearest point of stone No. IV.,—is 127 feet 6 inches. The distance from E to F is 22½ feet.

These facts suggest that the four stones complete a design, of which the two outstanding features are (*a*) the fact that the reclining stone points east, and (*b*) that it has the two standing stones equidistant from it, “guarding” it.

2. *Lagavulin Standing Stones*.—On visiting Islay in the summer of 1913, I learned by accident of what appeared to be a similar monument near Lagavulin. Unfortunately, I was able to make only one hurried visit, and I did not secure accurate measurements. There was

some difficulty in locating the stones, but they were reached by striking to the north on a track which leaves the Port Ellen to Lagavulin road, about $1\frac{3}{4}$ miles from Port Ellen. The situation is about $6^{\circ} 9' W.$ and $55^{\circ} 38' 15'' N.$ Here there are two upright stones inclining towards the east, with a prostrate stone between almost covered with grass. The flat sides of the upright stones face east and west, and the two stones stand north and south of each other. Enough could be seen of the prostrate stone to satisfy me that it had a ridged back running east and west—*i.e.* at right angles to the line of the two “guarding stones.” The centre of the ridge was 9 feet 1 inch from one of the standing stones, and about 10 feet from the other. I found no trace of any stone due east from the prostrate stone. But the general arrangement of the three stones resembled the arrangement at Duachy, the chief difference being that at Lagavulin the line of the “guarding” stones ran due north and south—*i.e.* at right angles to the ridge of the prostrate stone. There were other standing stones in the vicinity, which at the time I did not connect with these three. One in particular, built into a wall with a fallen stone behind it, attracted my attention as being possibly due east of the prostrate stone, but I found that it lay considerably to the north of due east.

On returning home I purchased a 6-inch Ordnance map of the district (second edition, 1900, Argyllshire, island of Islay, sheet ccxxxii.), and discovered that the three stones in question appear to have been part of a very much larger scheme.

The following diagram shows the position of the stones of this larger scheme:—

A is the position of the three stones already described; D is the position of the standing stone built into the wall with a fallen stone behind it; B, C, and E are single standing stones which were not examined particularly; C and E are equidistant from B.

The distances AB, Bx, xC are equal to each other, and the three

stones C, A, D are in a straight line. The angle ABx is as nearly as possible 100° . The distance from A to D is about 2000 feet, and the distance from A to x is as nearly as possible 4000 feet. x is the point at which a line drawn from B to C intersects a line drawn east and west through A.

The measurements may be shown more clearly by giving them on the diagram (fig. 2).

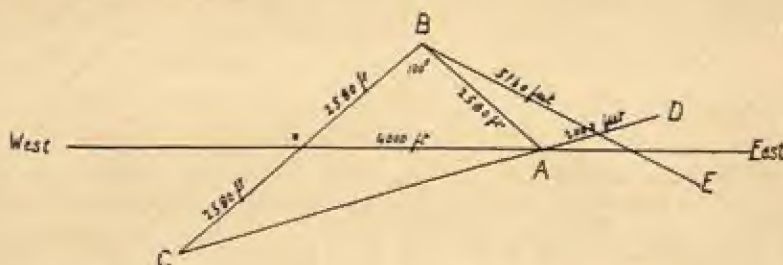


Fig. 2. Diagram showing positions of the Stones and their distances from each other.

The measurements may not be exact. They are taken simply from the Ordnance Survey sheet. But their relation to each other is not affected by this, and when the position of these stones is thus shown in diagram, it seems impossible to resist the conclusion that their position has been deliberately determined in pursuance of some design; *e.g.* it can hardly be a mere coincidence that stones C and E are equidistant from B.

What that design is, it is for experts to determine. I have formed one hypothesis, but it does not exhaust the problem, and is the mere speculation of an amateur.

Conclusion.—The facts above stated relating to these ancient monuments suggest that there is room for further investigation into the problem of their construction. They suggest that there may be a class of ancient monument consisting of two upright mono-

liths standing more or less north and south, with a recumbent stone between them pointing east. They suggest further that the apparently disconnected monoliths which are found in one vicinity may be related to each other by way of distance and direction, so as to form part of one design. It is impossible to generalise from two instances, but they indicate a direction in which there is perhaps something to be learned by further investigation.

V.

THE CARVED STONE BALLS OF SCOTLAND: A NEW THEORY AS TO THEIR USE. By LUDOVIC MACLELLAN MANN, F.S.A. Scot.

Interest centres round these balls because they are carefully carved and decorated, and are found practically only in Scotland. They have formed the theme of much, and perhaps futile, speculation as to their age and purpose. They first began about 1850 to be noticed by archæologists, and now some two hundred specimens are known to exist. All are of stone, except a bronze specimen from Lanarkshire. Superficially cut discs, usually six in number, are sculptured on the greater number. Some are cut with many small knobs, while others have a surface without protuberances, but bearing incised lines and other ornamental work. Some perfectly plain spherical stones have been inadvertently classified with them; and also a few perforated carved balls, which seem to belong to a different category.

Dr J. Alexander Smith was inclined to place these balls in a somewhat late chronological position—in the earliest Christian centuries (*P.S.A.S.*, vol. xi., 1876, p. 56); Sir John Evans, referring to one specimen, expressed the opinion that it "would seem to belong to the Bronze Period rather than to that of Stone" (*Anc. Stone Imp.*, 2nd edn., p. 421); and Mr J. Romilly Allen held that the Towie

ball "belongs clearly to the Bronze Age" (*Reliquary*, N.S., vol. iii. p. 105).

Dr Joseph Anderson hesitates to place them so far back as the Bronze Age (*Iron Age*, p. 172).

Others writers, some quite recently, give these relics a wide chronological range, extending back to the Stone Age.

The alleged finding of specimens in interments of the Stone and Bronze Ages has caused confusion. A misconception of the decorative features on two specimens, the Towie ball and the Lanarkshire bronze ball, has not infrequently caused these two specimens to be assigned to a period too remote. In both these specimens the decoration seems to me to be characteristic of a time not earlier than the Early Iron Age. On the Towie specimen is cut an isolated group of three small dots or depressions arranged in a triangular manner. This *motif* of the triple dots occurs on several early Scottish Christian monuments, is common in the early Christian illuminated manuscripts, and is found on a silver chain (*P.S.A.S.*, vol. x. p. 330), which bears also one of the Pictish symbols. Thus the ball seems to be linked up chronologically with the Early Christian sculpturings. Its decoration is "late Celtic" in style, and of a late phase of that style.

The carved work on a specimen in Perth Museum is very like the "thistle-heads" of the silver pins and brooches which have been found in Scotland with coins of the tenth century. A beautifully carved ball, which I obtained in Lanarkshire (*Prehistoric Catalogue*, Scot. Nat. Exhib. (1911), Glasgow, p. 858), has a row of small punctulations set marginally on one of its discs in the style of the rows of dots set medially in bands in the decorative work in metal and on vellum of the earlier medieval centuries.

The style of decoration on the balls and their discovery in earth houses, near brochs, and on sites occupied during the early centuries of this era, such as the Fort of Dunadd, Argyll, testify that these relics have as a probable centre point in their chronological range the

first two or three centuries of the Christian era. They may be classified as protohistoric, and I see no grounds for assigning any of them to the Bronze or Stone Periods. But some writers hold out strongly for an extension of their period back to those ages. The sole reason for this seems to be the supposed association of specimens in one or two cases with prehistoric interments.

There are only three cases in which it seems worth while to examine the statement that has been made that carved stone balls have been found in true association with prehistoric interments. In 1850 Sir Daniel Wilson (*Prehistoric Annals*, 2nd edn.) was told that two plain round stones were got with a burial in Dumbartonshire, and he refers to a statement in the *Statistical Acc.* (Kirkcudbright), vol. iv. p. 332, that a ball of flint is stated to have been found in 1809 with some other important things in a cairn on Glenquicken Moor. These balls, even granting they were in true and direct association with the interments, would probably be rejected (if they were now available for scrutiny) as coming within the category of the carved balls under discussion. I have from Aberdeenshire a smooth and almost perfectly spherical ball of flint which some people would take to be one of the carved stone balls, but the stone is simply a natural nodule conforming to the shape of the flint fossil. The third case in which a prehistoric association for these objects is alleged is that of three specimens said to have been found at a cairn at Ardkeiling, Elgin. They have been described by the late Mr Hugh Young (*Reliquary*, Jan. 1897, p. 46, and N.S., vol. iv., 1898, p. 119); but his information was got second-hand, and he did none of the discovery work himself.

One of the specimens seems to have been found in the usual way in the surface soil of a field, but two of them are supposed to have been associated with a burial cist some distance from the cairn. The discovery of two of these relics together is an excessively rare phenomenon, and is in itself sufficient to raise suspicions as to the genuineness of the association. Mr J. Muill, the farmer at Ardkeiling, who seems



Fig. 1. Scottish Ornamented Stone Balls (4).



Fig. 2. Scottish Ornamented Stone Balls (1).

to have told Mr Young of the incident, inclines to believe that they actually came out of the cist, as I have seen a letter from Mr Muill to this effect, to an Edinburgh correspondent.

It seems highly desirable, however, to have further evidence as to this discovery, but it may be too late to secure it.

In a few other cases the reports of the finders as to the stone balls having been picked up near a cairn or stone circle are of little value.

As to the possible purposes of these stone balls, it has been conjectured that they were used in some game or amusement. They are almost invariably found singly, a fact which does not strengthen such contention. If made to be rolled about, it is clear that so much fine and easily injured carved work would not have been put upon them, an argument which also weakens the hypothesis that they were employed either as loose missiles or as weapons attached to sticks by thongs.

An investigator has put forward the idea that the balls played some part in magical or religious ceremonies. It is, however, mere guesswork to say they were used in divining (*Arch. Assoc. Journal*, vol. xvii. p. 20), and indeed they possess no characteristic leading up to such an idea. The remarks, by Dr J. Alexander Smith (*P.S.A.S.*, vol. xi. p. 59) suggest a possible use of the stone balls as heads of sceptres or episcopal staffs, but there is not a jot of evidence to fortify such a suggestion.

Perhaps less improbable is Dr Smith's adopted suggestion that these balls were mounted or tied to rods and used flail-like as weapons. As the balls are of somewhat late period, it becomes necessary to inquire as to the records of the use of such objects. He instances the use of some such weapons at the Battle of Hastings and draws attention to drawings of them in the Bayeux tapestry. It is scarcely thinkable that much minute and laborious work should have been expended on an object to be subjected to the most violent impacts and to rough usage which would destroy the beautifully carved

surface. As is shown in the tapestry, the clubs were sometimes thrown bodily at the enemy and were admittedly rude weapons.

Dr Smith held that he had restored to its place a supposititious stone-mace "which," he states, "must have been brought in great numbers with the Saxons when they flocked in early times into Scotland." But why have none of these stones been discovered in England, and why are they so scarce in Southern Scotland, and why relatively common in districts farthest removed from Saxondom such as the Orkneys? Why, for example, is the Kilpheadry ball from Sutherland, made of native sandstone if it is of Saxon manufacture? Did the ball from Dunadd Fort, Argyll, come in with the Saxons? By no stretch of fancy can one think of these enigmatical balls as heads of a characteristic old Saxon weapon or having been used at the Battle of Hastings.

If attached to thongs like the South American bola, which consists of one or more stones coated with leather attached to a thong—a form of weapon foreign to Britain and Europe—we have the old objection to fine carved work being exposed to severe usage; and again, the necessarily strong leather thong, no matter how arranged, would cover much of the decorative work.

We must obviously look for suggestions in other directions.

If heads of weapons, it is strange that in the cases of knobbed specimens the protuberances are so low. If the knobs and discs were of greater prominence and sharpness, it is clear that the effectiveness of the stones as weapons would have been greatly increased.

I have reviewed all the suggestions that have been recorded, but all of them have weak points, and none has ever received hearty or unanimous acceptance.

The hypothesis I now venture to set out is one which will explain the many peculiarities of these relics, and is one which, I think, presents a better solution.

Several years ago, on examining some old Scottish weighing beams,

I found that associated with each of them was a roughly-cut stone which hung upon the beam and served as a movable poise or weight. At the same time I had been puzzling over the probable purpose of the carved stone balls, and it then occurred to me that their use could best be explained on the hypothesis that they were movable poises on primitive weighing machines.

In ancient times there were three main kinds of weight measurers. There was the familiar balance, favoured for small objects, where the weights are loose, furnished with a pan hung at each end of the beam, and having the swing point and point of suspension of the beam at the centre of the beam. Another method was that of the steelyard (a word not derived from "steel" as indicating a metal used in its construction), where the object to be weighed was placed on a hook or hooks or in some receptacle suspended at one end of the wooden beam, while a poise (a weight of stone or other material) was moved to and fro on the beam at the other end, and the required weight ascertained from that graded mark on the beam at which the poise had to be brought to effect a balance. In another of the appliances (sometimes styled the bismar) the poise was fixed, while the fulcrum or swing point was movable along the wooden beam. In these and other intermediate appliances a suspended weight was necessary. All the contrivances with poises were anciently very widely distributed. Like many other neo-archaic appliances, they survived in their primitive style in the remote districts of Scotland long after they had been modernised in other parts. Specimens of the "bismar," as it is called in Scotland, Iceland, and Scandinavian countries, might until recently have been secured as curiosities in the northern isles and down the east coast of Scotland to Berwickshire.

The poise was a roughly dressed stone either hung by an iron hook or by a network of string. Mr H. Ling Roth has written about them ("Oriental Steelyards and Bismars," *Tr. Roy. Anthropol. Inst.*, vol. xlii.), and shows that the appliance was in use so far away as China and

Japan. They were evidently widely distributed in remote times. In the Far East the stone poise was often hung by strings of hair or silk from the beam. He describes a specimen from Yarkand, China, where the travelling poise is an orange-shaped stone of granite, 1.37 kilogrammes in weight, with a wooden beam 73 cm. long. The poises of Chinese steelyards in the British Museum are often six-sided, and one has oval discs cut upon it. Some of them remind one of the carved stone balls of Scotland, which is suggestive that the latter may have been used as poises. The knobs, sunk interspaces, and channelled gutters on the Scottish specimens are highly ornate, but would have been useful in allowing the poises to be securely and artistically suspended by a network. Experiment demonstrates how easily and elegantly the Scottish balls can be encased by a network. The strands, in the case of the ball experimented with, were arranged in the cut-out interspaces and brought into one string for suspension to the beam. Some of the Scottish specimens have a slight flattening of, or an absence of decoration on, one side, and it is noticeable that the stones sit naturally on that side which was probably opposite to that from which the suspension cord was likely to have run upwards. This method of suspension would in no case interfere with the decorated surface, but would enhance the ornate character of the poise.

The carefully sculptured work seems appropriate in a thing which was to be handled daily and seen by many, at a period when the people delighted to have even simple objects of domestic and utilitarian use elaborately ornate, and were accustomed to lavish much time and artistic skill upon them. The completely decorated surface of many of the balls is not remarkable if one supposes the stones were hung from the beam suspended in a delicate network of strings, leaving practically every part of the surface open to view, the strings being arranged so as to enhance the appearance. A scrutiny of those balls which have escaped weathering conveys the impression that they

have been smoothed, hand-soiled, and blackened as if by continuous handling, and this feature has been remarked upon by Dr John Alexander Smith (*P.S.A.S.*, vol. xi. p. 55), though the significance of it did not apparently occur to him. Some other writers have also noticed that they have been so much handled, rubbed, and blackened by wear of the hand as to disguise the texture and natural colour of the stone.

If beam poises were widely distributed, why is it that the ornate poises are to be found only in Scotland? It would appear that in some areas the people did not care to decorate the poises. In England their place seems to have been taken by burnt-clay weights, which were easily perforated; and it is curious that just as in the border counties of Scotland the carved stone balls are very scarce, and the clay weights are not uncommon. It is clear also (if the hypothesis put forward is correct) that while the primitive form of weighing-beam continued in use in Scotland from early medieval times to almost the present day, the stone poises became degraded in shape and decoration until for many recent centuries an ordinary rough stone often with an iron hook sufficed. The wooden framework of the early bismar would not often survive, and the only vestige of such a contrivance would be the weight alone, and if that consisted of a rough stone it would at once lose its identity and be ignored. If the weight were well made and decorated and became lost and discovered in the soil at a later period, it would at once be brought home and treasured, and give rise to much speculation as to its purpose, just as the relics under discussion have done during the last half-century.

Since writing this paper I applied to Mr Alex. O. Curle for permission to arrange for the weighing of the carved balls in the Scottish National Collection, as the data so obtained might throw light on the problem. Mr Curle told me, however, that this work had just been undertaken by Mr Wilfrid Airy, B.A., M.Inst. C.E.

I have since been favoured by Mr Airy's paper "On the Ancient

Weights of Britain," read to the Institute of Civil Engineers (*Excerpt Minutes of Proceedings of the Institute of Civil Engineers*, vol. xcxi., Session 1912-13, Part I.).

Mr Airy gives a history of the three pounds (Avoirdupois, Roman, and Troy—the only recognised pre-Norman weight standards of Britain), and the various weights in clay, lead, and other metals, and in other materials, found on Romano-British and other early sites.

- In many English museums are objects of burnt clay and of chalk and limestone made into the form of truncated cones, triangular slabs, cylinders, and rings, nearly always perforated as if to facilitate suspension, and ranging in weight from $\frac{1}{2}$ lb. to 12 lbs. They have been got on Romano-British sites and on sites occupied for a few centuries before the Roman occupation of Britain. A very few have been got in the southern parts of Scotland. Mr Airy shows they could hardly have been net-sinkers or loom weights, and were almost certainly trade weights following in their units the Avoirdupois system.

He attempts to establish that the commercial weights began to come into use in Britain some little time before the Roman invasion. He does not refer at all to ancient beams and their movable poises, but states that the balls "must be supposed to have served some generally useful purpose by themselves alone."

Mr Airy remarks upon the frequent occurrence of perforated clay objects (presumably weights) in England, and their great rarity in Scotland. It seems clear that weights were made of clay and less often of chalk and limestone in England, and of stone in Scotland. He holds that "while the antiquarians have not as yet formed any reasonable conjecture as to the use and object" of the carved stone balls peculiar to Scotland, they were "either trade weights or were at any rate made in accordance with a trade-weight standard, the Avoirdupois pound." From a table, prepared by Mr Airy of carefully ascertained weights of 81 stone balls in Edinburgh, Aberdeen, and

London, they appear to fall into four divisions—an eighth, a quarter, one-half, and one-pound weights; but by far the largest number approximate to the denomination of 1 lb. Avoirdupois.

Mr Airy goes no further, however, than to offer the suggestion that the Scottish stone balls were employed as trade weights. But his suggestion is extremely helpful in working out the hypothesis that they were used as poises on weighing-beams.

The distribution respectively of weights of clay and weights of stone in Britain suggests that the ancient bismar, while used throughout Britain, differed in various areas in respect of the material used in the movable poises. I have never heard the suggestion that the perforated clay weights of England were used on the bismar, but this would now appear to be probable.

It is only by this hypothesis (that the balls were employed as beam-poises) that one can explain all the peculiarities of the relics :—

1. They are practically always found singly, as each small community would not require more than one weighing-machine.
2. There is a total absence of well-authenticated cases of their occurrence in graves, but they have often been discovered at domestic sites.
3. The decoration of knobs, incised lines, gutters, hollow and intercommunicating interspaces between discs, is not only highly ornate but assists in allowing the fixing of a network for suspension.
4. Their confinement to Scotland, and the confinement of burnt-clay weights to the areas where the balls are not found, simply means that in different territories different styles of poises were in vogue in ancient times. The nature of the material used for the poises dictated generally whether they were to be perforated or not. Soft material, such as clay, limestone, and chalk, induced perforation.
5. Their employment in a service which did not expose them to violent usage and impact induced fine surface workmanship to be lavished upon them.

6. The base and top, often recognisable either as a slight flattening of one side or by the presence of one plain or less decorated disc or side, is explained.

7. The finely smoothed gutters are accounted for by the play of a string.

8. Their appearance of being often handled, as indicated by an oiliness, smoothness, and darkening of the surface on unweathered specimens, is accounted for.

9. Their period coincides with the first developments of accurately managed systems of trade and barter.

10. The coincidence as to certain units of weight undoubtedly represented by them points to their having been trade weights.

11. They could be more appropriately used suspended, not only without loss of decorative effect, but with an enhancement of it, than affixed to heavy thongs or rods.

12. If the poise in Scotland anciently acquired greater beauty than in any other area, this furnishes one more indication of the exceptionally high degree of æsthetic attainment of the ancient people of North Britain as compared with that of the people of ancient Saxondom.

13. The reasons for sculpturing the balls might have been threefold—not only to please the eye and to assist the gripping of the suspension cords or network, but to prevent an easy reduction in the weight of the ball by fraudulent traders. If the ball were worn down or intentionally scraped so as to reduce its original weight, then the alteration in bulk might be obvious in the case of a ball with a finely chiselled and definite pattern upon it. Thus a finely decorated surface, like the milling on a coin, tended to preserve the weight or measure from fraudulent mutilation.

The Roman *statera* may have been the prototype of the weighing-beam of Northern Europe and Britain. It seems to have spread into Northern Europe and to have been introduced shortly before the Roman invasion, as were also mechanical appliances such as the loom, the

wheeled vehicle, the rotatory quern, the lathe, the potter's wheel, and such things as coins and currency bars.

I think it can be shown that several of these balls performed a double function, and that they contain in their carved work certain units of length. The diameter of a ball may have varied with the specific gravity of the stone out of which it was made, and its diameter was in any case not easily ascertained ; but the diameter of its discs and the lengths of certain of the lines and channels cut upon it seem to bear a relationship in each specimen.

A feeling of disappointment may arise in many minds that these curious stone balls, the product of much skill and artistic work, were of no magical, ceremonial, or warlike origin, but were merely an adjunct of an apparatus used in prosaic and everyday commercial operations. But on the other hand, if the hypothesis is well founded, as I venture to say it is for thirteen specific good reasons, we get a glimpse into a system of weights and measures which underlay commercial activity in Scotland at a time not far short of 2000 years ago, of which little accurate knowledge has come down to our time.

VI.

AN INVENTORY OF THE ANCIENT MONUMENTS REMAINING IN THE ISLAND OF IONA. BY R. A. S. MACALISTER, M.A., PROFESSOR OF CELTIC ARCHAEOLOGY, UNIVERSITY COLLEGE, DUBLIN.

The following catalogue was compiled by me during the month of July 1913, and will, it is hoped, be found to contain all the monuments that were to be seen on the island at the time.

It is impossible to maintain the scheme of classification rigidly, as many slabs have more than one of the designs on which the subdivision adopted has been based, and therefore should, properly speaking, be enumerated in more than one group.

In each class the stones are catalogued in order, as they occur in Reilig Orain (RO in the column headed "present position"), St Oran's Chapel (OC), the Cathedral (C), or the Nunnery (N).

The dimensions are stated in the order length, breadth, thickness. When, as often, the breadth tapers from one end of the stone to the other, the fact is indicated as in this example: 2' 2½"-1' 6". In fractured slabs it is the *present* size of the stone which is given. When the dimension could not be ascertained without excavation, it is left blank.

When a monument is figured in Graham's *Antiquities of Iona* (London, 1850), or Drummond's *Sculptured Monuments in Iona and the West Highlands* (Edinburgh, 1881), a simple reference to the plates in those works, indicated by "G" and "D" respectively, has been thought sufficient.¹ Otherwise a description is given sufficient to identify the stone.

I have to thank Mr Alex. Ritchie, the custodian of the ruins, for much help and information given me while compiling the list.

¹ This is not necessarily a guarantee of the accuracy of the drawings referred to.

AN INVENTORY OF THE ANCIENT SEPULCHREAL MONUMENTS ON THE ISLAND OF IONA.

CLASS L.—SLABS OF THE PERIOD OF THE EARLY CELTIC MONASTERY, WITH CROSSES BUT NO INSCRIPTIONS.

Number.	Dimensions,	Description or Reference.	Present Position.
1	3' 6" × 1' 11" - 1' 5" × 0' 6"	Micaceous slate slab, L-shaped; the side part is 1' 9" long and 0' 6" across. A groove divides it from the main part of the stone, as though an attempt had been made to cut it off. In this side part is a wedge-shaped depression apparently for receiving a metal cramp. The main part of the stone has a wheel cross, much worn, with small rolls in the angles.	RO
2	2' 8" × 1' 10" × 0' 5"	Upper part of a slab with a plain broad Latin cross having slightly expanding ends, in relief.	RO
3	4' 11" × 2' 0" × 0' 5"	G 24a, D 6a.	RO
4	2' 1" × 1' 2" × 0' 1"	Upper part of a slab with a two-line Celtic cross: at present acting as footstone to a modern grave.	RO
5	5' 0" × 1' 2" × ?	D 8c. [N.B. D 8b and D 8c are different slabs, not the same as stated in Drummond.]	RO
6	Roughly circular 1' 2½" diam. × 0' 4"	Rude Celtic cross in relief within a circular border. Broken in two.	OC
7	3' 4" × 1' 8" × 0' 2½"	Lower part irregular slab with Celtic cross upon it.	OC
8	2' 0" × 1' 1½" × 0' 3"	D 7b and D 7d (on opposite faces of one stone).	OC
9	2' 0" × 1' 3" × 0' 3"	D 7c.	OC
10	2' 6" × 1' 2" - 1' 0" × 0' 7"	Block of freestone with Celtic cross upon it.	OC
11	6' 7" × 3' 2" × 0' 3"	G 20a, D 8a.	OC
12	2' 0½" × 2' 5" × 0' 2"	Slab with plain two-line Latin cross.	OC
13	1' 3" × 0' 11" × 0' 4"	Lower part of a stone resembling No. 6 above, but larger.	OC
14	2' 0½" × 0' 11" × 0' 2"	Plain Greek cross in a circle.	OC
15	0' 9" × 0' 8" × 0' 3"	Irregular slab with Celtic cross in relief.	OC
16	2' 6" × 0' 10" × 0' 2½"	D 2c.	OC
17	2' 7" × 0' 11" - 0' 8" × 1' 3"	D 4e.	OC
18	2' 2" × 1' 3" × 0' 2½"	Slab tapering downwards to a point with a single-line Celtic cross upon it.	OC
19	2' 0" × 1' 2½" × 0' 2"	D 8b.	OC
20	2' 0" × 0' 8½" × 0' 2"	Slab tapering to a point with a single-line Celtic cross upon it.	OC
21	2' 6½" × 0' 9" × 0' 2½"	Plain two-line Greek cross.	OC

CLASS I.—continued.

Number.	Dimensions.	Description or Reference.	Present Position.
22	2' 7" × 0' 11½" × 0' 6"	D 2d.	OC
23	2' 4" × 1' 3" × 0' 4"	Wheel cross on a slab of slate, the base rising from a square.	C
24	1' 0" × 0' 10" × 0' 3"	Plain cross, single broad line, slightly expanding ends.	C
25	1' 7" × 1' 11" × 0' 3"	Small single-line cross fourchée.	C
26	3' 9" × 1' 3½" × 0' 2½"	D 29a.	C
27	1' 7½" × 1' 3" × 0' 5½"	D 2a.	C
28	4' 7" × 1' 10½" × 0' 2½"	D 3d.	C
29	3' 9" × 1' 9" × 0' 3"	D 3b.	C
30	?	D 2b. At present concealed under a pile of debris in the Chapter-house.	C
31	2' 4" × 1' 4" × 0' 4"	Celtic cross with looped terminals to arms.	N
32	3' 9" × 1' 11" × 0' 2"	D 10b.	N
33	About 4' long	D 5d.	N
34	5' 7" × 2' 3" × 0' 3"	D 5c.	N
35	3' 11" × 1' 1" × ?	D 9b.	N
CLASS II.—SIMILAR TO CLASS I., BUT WITH IRISH INSCRIPTIONS.			
36	4' 11½" × 1' 5½" × 0' 2½"	G 20b, D 6b.	RO
37	4' 3" × 2' 5" × 0' 5"	G 25b, D 9a (the inscription, <i>Oroit do Chum</i> (?), . . . has not been previously noticed).	OC
38	4' 8" × 1' 1" × 0' 3"	D 3c. (This inscription has been misread; it is really <i>Oroit ar anmain Flaind</i> twice repeated.)	C
39	1' 9" × 1' 6½" × 0' 3"	D 3a (the lower half now missing).	C
CLASS III.—SLABS WITH CROSSES HAVING FOLIAGEOUS ORNAMENT.			
40	5' 8" × 1' 5½"-1' 1½" × 0' 3½"	Much worn; design practically untraceable. (The first [southernmost] of the western row of slabs.)	RO
41	5' 8½" × 1' 7"-1' 5" × 0' 4½"	Much worn; apparently floriated cross. A deep line cut round margin of slab.	RO
42	5' 5" × 1' 7½"-1' 2½" × 0' 4"	D 31b.	RO
43	5' 6" × 1' 6" × 0' 2"	Slab with bevelled edge and floriated cross, much worn: north-east of eastern row of slabs.	RO
44	2' 11" × ? × 0' 5"	Small stone with floriated cross acting as footstone to a modern grave on east side of graveyard.	RO

CLASS III.—continued.

Number.	Dimensions.	Description or Reference.	Present Position.
45	2' 8" × 1' 3" - 1' 1" × 0' 4"	Floralized cross (?) within slightly moulded border.	OC
46	5' 1" × 1' 5" - 1' 4" × 0' 2½"	D 15b.	N
47	6' 5" × 1' 4" × 0' 4"	Cross between floral scrolls, much worn.	N
48	5' 5" × 1' 4" - 1' 2" × 0' 3"	G 48a, D 12a.	N
49	5' 9" × 1' 3" - 1' 2" × 0' 3"	D 29d (the head only shown in Drummond, but stone complete though worn).	N
CLASS IV.—STONES WITH FLORAL DIAPERS OR SCROLLS.			
50	6' 10" × 1' 9½" - 1' 7½" × 0' 4"	G 22b, D 17a.	RO
51	5' 11" × 1' 6" - 1' 4" × 0' 4"	D 31a.	RO
52	5' 9" × 1' 8" - 1' 7" × 0' 4"	D 20b.	RO
53	6' 6" × 1' 6" - 1' 3" × 0' 4"	G 21a, D 26b.	RO
54	5' 10½" × 1' 7" - 1' 5" × 0' 4½"	G 29a, D 18a.	RO
55	5' × 1' 3" × 4"	G 19a, D 30b. Lying S. of tomb of Donald Black, 1889.	RO
56	5' 11½" × 1' 7½" - 1' 6½" × 0' 5"	G 16b, D 21a.	RO
57	5' 5½" × 1' 5" × 0' 3"	G 29b.	RO
58	6' 0" × 1' 5" × 0' 5"	D 14b: but the drawing has erroneously 14 loops in the scroll instead of 12.	RO
59	6' 0" × 1' 7" - 1' 6" × 0' 3½"	D 21b.	RO
60	5' 9" × 1' 7" - 1' 5" × 0' 3½"	D 24b.	RO
61	5' 8" × 1' 5" - 1' 2½" × 0' 2"	G 28b, D 23b.	RO
62	5' 8½" × 1' 6½" - 1' 4" × 0' 4"	D 24a (an unsatisfactory drawing).	RO
63	5' 9" × 1' 5" - 1' 3" × 0' 3"	A stone of pattern similar to 62, much worn.	RO
64	5' 9" × 1' 6½" - 1' 4½" × 0' 3½"	Stone with floral device, much worn.	RO
65	5' 9" × 1' 6" - 1' 2½" × 0' 3"	Stone with bevelled edge round which is a rope pattern, and another rope pattern round the central panel, which contains a floral scroll: much worn.	RO
66	5' 8½" × 1' 3" × 0' 3½"	Two rows of dog-tooth, in the central panel a floral scroll of ten loops.	RO
67	5' 11½" × 1' 6" × 0' 4"	Floral diaper, much worn, inside a roll moulding.	OC
68	6' 9" × 1' 8" - 1' 5" × 0' 4½"	Bevelled edge: very elaborate floral diaper: worn.	OC
69	5' 9" × 1' 5" - 1' 2" × 0' 4"	D 30a. The missing half is flaked away, not left uncut as described in Drummond.	OC
70	5' 11" × 1' 8" - 1' 4½" × 0' 3"	G 27b.	OC
71a	3' × 1' 6" × ?	Three fragments, two embedded in cement and one a small flake, of D 34b.	C
71b	3' × 1' 6" × ?		
71c	1' 14" × 0' 9½" × ?		

CLASS IV.—continued.

Number.	Dimensions.	Description or Reference.	Present Position.
72	5' 8½" × 1' 5½" - 1' 4" × 0' 3½"	G 47b, D 14a.	N
73	6' 2" × 1' 7" - 1' 4" × 0' 4"	Floral diaper, square block at lower end, interlacements at top.	N
74	6' 1" × 1' 8" - 1' 4½" × 0' 3"	D 12b.	N
75	6' 0" × 1' 9" × 0' 4"	G 49a, D 13b.	N
76	2' 4" × 1' 6" × 0' 2"	Fragment with floral device.	N
77	2' 2" × 1' 4" × 0' 2½"	Fragment with floral device and moulded edge.	N
78	3' 7" × 1' 7" × 0' 3½"	Fragment with floral diaper, much worn.	N
79	1' 6" × 1' 3" × 0' 3"	Fragment with floral diaper.	N
80	3' 4" × 1' 8½" × 0' 3"	Fragment with floral diaper inside a panel with rounded top, much worn.	N
81	1' 10" × 1' 7" × 0' 3"	Fragment with floral device.	N
82	5' 4" × 1' 5½" - 1' 3½" × 0' 3½"	G 49b.	N
83	4' 4" × 1' 6" × 0' 4"	Much worn foliations inside a row of dog-tooth.	N
84	6' 5" × 1' 8" × 0' 5"	D 15a. Broken in two.	N
85	2' 4" × 1' 9" × 0' 3"	End of a slab, with foliations.	N
86	6' 3½" × 1' 4½" - 1' 2" × 0' 3½"	D 16b.	N
87	6' 3" × 1' 9½" - 1' 6" × 0' 3"	G 48b, D 13a.	N
88	5' 2" × 1' 1" × 0' 3"	D 16a—broken in two.	N
89	5' 11" × 1' 6" × ?	Foliations, much worn.	N
90	3' 10" × 1' 6" - 1' 2½" × ?	Stone with elaborate interlacement, much worn: a square block left uncut in the lower part of the slab.	N
91	1' 8" × 0' 9" × 0' 3"	Small fragment with foliations.	N
92	5' 8" × 1' 6" × ?	Floral pattern, almost effaced.	N
93	5' 8½" × 1' 5" - 1' 4" × ?	Stone with bevelled edges and floral scroll.	N
CLASS V.—SLABS WITH SWORDS.			
94	5' 7" × 1' 3½" - 0' 11" × 0' 4"	G 23a, D 19a.	RO
95	5' 10½" × 1' 8½" - 1' 5" × 0' 3½"	G 28a, D 23a.	RO
96	5' 10" × 1' 7" - 1' 3½" × 0' 3"	G 21b, D 27b.	RO
97	6' 1" × 1' 7" - 1' 3½" × 0' 5"	D 28b.	RO
98	6' 1" × 1' 5" - 1' 2½" × 0' 3"	G 22a, D 26a.	RO
99	5' 7½" × 1' 9½" - 1' 4½" × 0' 3½"	D 28a.	RO
100	4' 3" × 2' 7" × ?	Red granite, much worn, a line round margin, apparently a sword in the middle of the slab.	RO
101	5' 10" × 1' 6" - 1' 2½" × 0' 3½"	Floriated cross inside moulded margin: on dexter side of shaft a floral scroll, on sinister a sword.	RO

CLASS V.—*continued*.

Number.	Dimensions.	Description or Reference.	Present Position.
102	5' 5" × 1' 5½" - 1' 2" × 0' 4"	D 22a.	
103	6' 1" × 1' 5" - 1' 3" × 0' 3½"	D 20a.	RO
104	5' 9" × 1' 6" - 1' 3" × 0' 3½"	D 19b.	RO
105	5' 10" × 1' 8" - 1' 4½" × 0' 4"	G 10a, D 27a.	RO
106	3' 7" × 1' 5½" - 1' 2" × 0' 3½"	D 22b.	OC
107	4' 3" × 1' 7" - 1' 5" × 0' 3"	Sword between floral scrolls, much worn, top of slab broken off.	OC C

CLASS VI.—SLABS WITH GALLEYS.

108	6' 9" × 1' 10" - 1' 6½" × 0' 5½"	G 15, D 17b.	RO
109	5' 10½" × 1' 7" - 1' 5" × 0' 4"	G 24b, D 25b	RO
110	6' 2" × 1' 8½" - 1' 7" × 0' 5½"	G 10, D 25a.	RO
111	6' 4" × 1' 8" - 1' 6" × 0' 5"	Floral diaper, galley at top.	OC
112	5' 11½" × 1' 7" × 0' 4½"	Galley, floriated panel above, inscription * and floral diaper below.	OC C
113	5' 11½" × 1' 5½" × 0' 4"	Galley, floriated panel above and floral diaper below.	C

CLASS VII.—SLABS WITH ECCLESIASTICAL EFFIGIES.

114	6' 2" × 1' 9" - 1' 8" × 0' 3"	G 11, D 33a.	RO
115	6' 2" × 1' 6" - 1' 3½" × 0' 4"	G 19b, D 33b.	RO
116	5' 5" × 1' 6" × ?	G 23b.	RO
117	5' 6" × 1' 9½" - 1' 5" × 0' 4"	G 26, D 34a.	RO
118	6' 4½" × 1' 11½" × 1' 2"	G 34, 35, D 45b.	OC
119	6' 4" × 1' 10" × 1' 1"	G 36, D 45a.	C
120	1' 3½" × 1' 6" × 0' 3"	Much worn fragment divided into two panels by a vertical bar: in each panel a small figure, one of which may represent a priest serving at an altar (as in the top panel of No. 94). Too worn, however, for certainty.	C N
121	4' 2" × 1' 9½" × 0' 3"	G 46, D 32b.	N
122	6' 5" × 1' 9" mean breadth × 0' 2"	G 47a, D 32a. There is an illegible inscription round the edge not noted by either Graham or Drummond.	N
123	4' 5" × 2' 2" × 0' 3"	G 45, D 44.	N

* This inscription is almost worn smooth: I think it reads HIC IACET RANA | LDVS MACDOMNUILL, which may be offered as at any rate the first published attempt at its decipherment.

CLASS VIII.—SLABS WITH MILITARY EFFIGIES.

Number.	Dimensions.	Description or Reference.	Present Position.
124	6' 10" × 2' 5" - 2' 0" × 0' 5" (slab) + 0' 5" (figure)	G 13, D 37, 38.	RO
125	6' 9" × 2' 3" × 0' 4" (slab) + 0' 2½" (figure)	G 12, D 42.	RO
126	7' 1" × 2' 2" × 0' 5" (slab) + 0' 8" (figure)	G 14, D 41.	RO
127	6' 11" × 2' 2" × 0' 5" (slab) + 0' 4" (figure)	G 9, D 40.	OC
128	6' 7" × 1' 8" × 0' 4"	G 37, D 39.	C
129	5' 10" × 1' 0" × ?	Fragment, top and sinister side broken away. Floral diaper with small military figure in upper part of slab.	C
130	7' 9" × 3' 9½" × ?	G 33.	C
131	6' 1" × 2' 1" × ?	D 35b.	C

CLASS IX.—FREE-STANDING CROSSES.

132	5' 9" × 2' × ?	Socket-stone of a cross: a circular depression in the upper surface beside the socket.	RO
133	1' 1" × 0' 6" × ?	Socket-stone of a cross.	RO
134	?	Head of a free-standing cross, sunk nearly completely in the ground at the foot of the fourth grave northward from the eastern row of slabs.	RO
135	2' 7" × 2' 8" × 1' 6"	Socket of a cross, in red granite.	OC
136	1' 11" × 2' 1" × 0' 7"	" "	OC
137	1' 2" × 1' 1" × 0' 2½"	Fragment, probably of a free-standing cross, with interlacing upon it.	OC
138	? }	Fragments of at least two free-standing crosses of large size.	OC
139			
140		Fragment of a small cross cut out of a slab of mica slate.	OC
141	..	St Martin's Cross.	C
142	..	St Matthew's Cross (stump at Cathedral, fragments of head in OC).	C and OC
143	..	St John's Cross.	C
144	5' 3" × 1' 8" at base × 0' 5"	Mackinnon's Cross.	C
145	1' 2½" × 1' 0" × 0' 2½"	One arm of a crucifix, the surface of which has been elaborately decorated.	N
146	..	Maclean's Cross.	Road-side.

CLASS X.—MISCELLANEA, ILLEGIBLE SLABS, FRAGMENTS, ETC.

Number.	Dimensions.	Description or Reference.	Present Position.
147	5' 4" × 1' 3" × 0' 11½"	Faint traces of ornamentation round edge, and a line drawn round margin, but device illegible. Marking a modern grave near gate of cemetery.	RO
148	6' 9" × 2' 4"-2' 2" × 0' 3"	Large flat slab bevelled round edges, no trace of lettering or ornamentation on surface.	RO
149	6' 4" × 2' 0" × 0' 2½"	Slab with four depressions on the surface, and grooves along the two sides and one end: probably part of a construction, not a memorial slab.	RO
150	6' 2½" × 1' 8" × 0' 4"	G 18, D 35a.	RO
151	5' 10" × 2' 3" × 0' 4"	G 17.	RO
152, 153	..	Two stones acting as footstones to the grave of Duncan Macphail, 1891, each standing 1' 2" above ground, respectively 4" and 4½" thick and 1' 1" and 1' 2" broad. Apparently parts of a slab: only a marginal roll-moulding visible.	RO
154	5' 8" × 1' 6" × ?	A flat slab, bevelled round edge, totally defaced.	RO
155	6' 7½" × 1' 10"-1' 8½" × 0' 6"	Large flat slab, rough, edges bevelled, faint traces like a diaper or interlacing.	RO
156, 157	..	Just north of No. 155, two fragments each about 1' 8" square, with very faint traces of a diaper pattern.	RO
158	5' 3" × 1' 8" × ?	Slab with bevelled edge, traces of ornamental work on surface, with a panel of interlacings (?) at the top. Just north of the tomb of Donald M'Lean, 1896.	RO
159	5' 9" × 1' 6"-1' 4" × ?	Slab bevelled round edge, a floriated cross (?) much worn. On the fourth of a row of graves northward from that of Donald M'Lean, 1896.	RO
160	2' 6" × 1' 9" × 0' 5"	Upper part of a slab with the head of a floriated cross, almost totally defaced. Just east of the western row of slabs.	RO
161	5' 6" × 1' 7" × ?	Slab with bevelled edge, traces of ornament on surface. Just south of the eastern row of slabs.	RO
162	6' 9" × 2' 4"-2' 2" × 0' 3"	Large plain flat slab, bevelled edge.	RO

CLASS X.—continued.

Number.	Dimensions.	Description or Reference.	Present Position.
163	6' 3" × 2' 2" × 1'	Flat plain stone with a moulding round edge, more like the table-stone of an altar or altar-tomb than a sepulchral slab. Marking a modern grave just north of that of John Mackay, 1780.	RO
164	5' 3" × 2' 2" × 1'	Slab, upper surface convex and plain, with two lines drawn round the margin: ornamentation completely defaced. Lying just south of the red granite cross-slab, No. 3, <i>ante</i> .	RO
165	6' long	Semi-cylindrical coped stone.	RO
166	5' 6" × 1' 3" × 0' 3"	Slab with bevelled edge, no device. Just north of tomb of James MacArthur, 1912.	RO
167	5' 6" × 1' 5" × 0' 3"	Edge bevelled, very faint traces resembling a floriated cross, but quite doubtful. Broken in two.	OC
168	5' 7½" × 1' 2½" × 0' 4"	Totally defaced.	OC
169	3' 5½" × 1' 2" × 0' 4"	Top slightly hollowed: moulding round border, but no trace of carving visible. At east end of the chapel, with the large slab No. 11, <i>ante</i> , standing on it.	OC
170	2' 8" × 1' 0"-0' 11" × 0' 5"	Block of free-stone, a row of broad notches on one edge, but no other traceable pattern.	OC
171	1' 6" × 1' 5" × 0' 3"	Fragment worn quite smooth, dog-tooth ornament on the edge.	OC
172	4' 3" × 1' 8"-1' 4" × 0' 4½"	Slab with top broken off: pattern effaced.	C
173	5' 10" long	Coped stone, G 27a, D 11c (in Cathedral grounds).	C
174	3' 11" × 1' 10" × 0' 2"	Slab of slate with line drawn round margin, at upper end a plain Greek cross of two lines.	N
175	3' × 1' 6" × 1'	Slab similar to No. 174, with a similar cross.	N
176	5' 2" long	Plain slab of slate, similar to No. 174, but without cross.	N
177	0' 11" × 2' 0" × 0' 3"	Small fragment, top of a slab.	N
178	2' 8" × 1' 1" × 0' 0½"	Fragment of a slab with roll-moulding along edge, nothing on surface.	N
179	5' 8" × 1' 6" × 0' 3"	Plain slab with hollow bevel along edge.	N
180	1' 7" × 1' 3" × 0' 2½"	Defaced fragment.	N
181	1' 7" × 1' 4½" × 0' 2"	Lower end of a slab with an unrecognisable figure upon it.	N
182	7' 0" × 2' 9" × 0' 4"	Large flat slab without any trace of a device upon it.	N

CLASS X.—*continued.*

Number.	Dimensions.	Description or Reference.	Present Position
183	1' 3" × 1' 4½" × 0' 4"	Middle part of rounded slab with moulding on edge, remainder effaced.	N
184	6' 0" × 1' 11" × ?	Plain slab with bevelled edge and a single minute cross on the surface: possibly an altar-slab.	N
185	6' 2" long	Coped stone, triangular section.	N
186	5' 1½" × 1' 4" × ?	Stone broken in two, no traceable pattern.	N
187	about 5' long	Slab much worn: a line drawn round margin: the central device (a cross in relief ?) not traceable.	N
188	5' 9" × 1' 6"-1' 2" × ?	Defaced: possibly a floriated cross.	N
189	4' 9" × 1' 4" × ?	Stone with two deep parallel grooves running longitudinally from end to end, dividing the surface into two long narrow rectangular panels with a roll-moulding between them.	N
190	4' 10" × 2' 0" × ?	Plain slab of slate, like No. 176.	N
191	5' 10" × 1' 7" × 0' 4½"	Quite plain stone, with bevelled edge.	N
192	5' long	Large irregular slab, no device.	N
193	5' 2" × 2' 2½"-1' 6" × 0' 3"	Hopeless.	N
194	5' 2" × 1' 8" × ?	Quite plain.	N
195	5' 6" × 1' 4" × ?	Moulding along edge, but nothing else.	N
196	5' 11" × 1' 4" × ?	Moulding all round edge: perhaps a cross in centre, but nothing clear.	N
197	5' 6" × 1' 5" × ?	Hopeless.	N
198	6' 5" × 1' 2½" × ?	Hopeless.	N
199	4' 10" × 1' 5" × ?	Quite plain.	N

Since the above list was compiled a number of the monuments have been transferred to the shelter of the Cathedral, to protect them from the weather and other destructive influences.

It may be worth noticing specially that the large MacBrayne effigy (D 43) is not in Iona, and none even of the oldest residents have any knowledge of it.

DISSENT AND PROTEST BY DR HAY FLEMING.

(See p. 10.)

*To the President and Council of the
Society of Antiquaries of Scotland.*

In my own name, and in name of all the Fellows of the Society who adhere to me, I dissent from and protest against the decision of the Society, at its adjourned General Meeting on the 15th instant, in favour of the opening of the National Museum of Antiquities on the Lord's Day, because :—

1. No section of the community has ever publicly expressed a desire to have the Museum opened on that day.
2. Such opening is quite unnecessary.
3. The Council has not sufficiently, if at all, considered the propriety of opening the Museum on the evenings of week-days, although, prior to October 1890, fully two hundred and twenty-six thousand visitors patronised it between 7 and 9 o'clock on the Saturday evenings, during twenty-nine of the years that it was housed in the Royal Institution.
4. The public will have more than ample opportunity of inspecting the Museum if it is opened on week-day evenings.
5. The national desire has long been to have the first day of the week preserved (except for works of necessity and mercy) as a day of rest.
6. This is our impression, which was not contradicted at the Meeting, that one of the reasons for wishing to have the Museum opened on the Lord's Day is to obtain from the Treasury an increase of wages for the *employés*, who would naturally expect special pay for "Sunday" labour. If these men are at present underpaid, this should be met on its own merits.

7. Being neither a work of necessity nor of mercy, the opening on the Lord's Day would, on the part of the attendants, be a direct breach of the fourth commandment; and, although the present *employés* may have no religious scruples in the matter, when successors have to be appointed the most suitable and reliable men then eligible may, on conscientious grounds, refrain from applying.
8. This proposed opening on the Lord's Day, never mooted in the Society until now, has introduced discord; and, if persevered in, is likely to disturb seriously the harmony which has prevailed for more than a century.
9. Those who, on conscientious grounds, are opposed to the opening on the Lord's Day may withhold donations from the Museum, or, although possessed of excellent qualifications, may decline to join the Society.

The statement made by Lord Guthrie, on behalf of the Council, that the proposed hours of opening on the Lord's Day (from 2 to 4, or 2 to 5, in the afternoons) would be so carefully restricted that there need be no fear of further encroachment, is, on the face of it, fallacious. This is the thin end of the wedge. Successors in office may extend the hours, and introduce other innovations, such as a public lecturer on Museum objects, lantern displays, and refreshments.

It is hoped that this Dissent and Protest, with the reasons thereof, will be printed in the *Proceedings* of the Society.

(Sgd.) D. HAY FLEMING.

19th December 1913.

INDEX.

	PAGE
Alva, Clackmannanshire, Prehistoric Burial at,	196-200
Animal Remains found in Earth-House at Cairn-na-Bhodachd, Skye, . .	205
Anniversary Meeting,	1
Argyllshire, Notes on certain Standing Stones in,	403-407
Arnot Arms at Cockburnspath,	225
Arrowhead of Flint, from Oxnam, Roxburghshire,	371
Arrowheads of Flint, from Fyvie, Aberdeenshire,	371
Auchmuty (George), Donation of Remains of Urn by	11
Axe, Bronze Socketed, from the Farm of South Friarton, St Martin's, Perthshire,	371
—— Hammer from Foulden, Berwickshire,	109
—— ——— of Greenstone, found in Cairn at Foulden,	323
—— ——— of Stone from Burnside Mill, Forfar,	16
—— ——— of Stone, from Glasserton, Wigtownshire	16
—— ——— of Stone, from Glasserton, Wigtownshire	16
Axes of Stone, from Fyvie, Aberdeenshire,	371
Ayr, Hoard of Coins found at,	401
—— Jar of Buff Ware found in,	371
Ayre, Broch of, St Mary's Holm, Orkney, Account of the Excavation of	31-51
Badenoch, Ruthven Barracks in,	25-30
Baird (J. G. A.), Account of the Excavation of Two Hut-Circles of the Bronze Age, in the Parish of Muirkirk, Ayrshire, by,	373-381
Balfour (Miss), Donation of Glass Bottle and Brass Lantern by,	13
—— (Right Hon. A. J.), Donation of Stone Mould from Ross-shire by, . .	13
Balgreggan Quarry, Stoneykirk, Roman Coins found at,	395
Ball of Stone, from Fyvie, Aberdeenshire	371
—— ——— from Skara,	347
—— Stone, from Skerrabrae, Skail, Orkney,	270
Ballinaby, Islay, Brooch from,	312
Balls, Carved Stone, A New Theory as to their Use,	407-420
Barbour (G. F.), Donation of Bone Implements, Two Discs, and a Whorl, by,	370
Barra, Island of, Brooch from the,	309

	PAGE
Barron (Rev. D. G.), Note on Three Sculptured Monuments in Garrock Churchyard, Kincardineshire, by,	206-209
Bead found at Sandwick, Orkney,	370
Beads, Fragments found at Newstead,	341
—— of Glass from Earlstoun,	16
Bell (John), Donation of Double-Edged Sword found at Torbeckhill by,	13
—— (Rev. W. F.), Donation of Book bearing the Signature of Hugh Mackail, Covenanting Martyr, by,	193
Beveridge (Rev. W.), Notes on Excavations at Dundargue Castle, Aberdeenshire, and on a Stone Circle and Grave at New Deer, Aberdeenshire, by,	184-192.
Bishop (A. Henderson), F.S.A. Scot., An Oransay Shell-Mound—A Scottish Pre-Neolithic Site, by,	52-108
Blades, Rapier-shaped Bronze, found at Drumeoltran, Kirkcudbright,	333-335
Bone and Antler Implements, from Broch of Ayre, Orkney,	40-45
—— Implements from Borenish Fort, Loch Tummel	370
—— Implements from Oransay Shell-Mound	97-99
—— Objects from Oransay,	12, 292
—— Scoop found at Skara,	348
Books, Donation of, 14, 111, 193, 271, 336, 370	
—— Purchase of,	17, 372
Borenish Fort, Loch Tummel, Bone Implements, Two Discs, and a Whorl from,	370
Bottle of Glass, from Luggate Barn, Haddingtonshire,	13
—— Small Ivory Toilette, found at David's Tower, Edinburgh Castle	251
Bracelets of Glass, Fragments of,	16
Brass Object found at Castledykes,	394
Broadsword and Scabbard, Highland, Donation of,	109
Broch of Ayre, St Mary's Holm, Orkney, Account of the Excavation of,	31-51
—— Awl and Splinter of Bone, and Combs wanting	
Teeth from,	42
—— Bone Pins and Fragments from,	44
—— Bronze Pins from,	45
—— Cylinder of Bone, Perforated, from,	40
—— Fragments of Pottery from,	45-48
—— Human and Animal Remains from,	49-50
—— Lamp of Stone, Two Mortar-like Vessels, and	
Socket Stone from	39
—— List of Relics found at,	38-50
—— Plan of,	32
—— Sections of Forms of Lips of various Pottery	
Vessels from	48
—— Shaped Pieces of Bone and Antler, Perforated, from	41

	PAGE
Broch of Ayre, St Mary's Holm, Orkney, Two Bone Dice and their Numbered Faces from,	43
— Two Whorls and Grooved Sinker from,	39
— Vessel hollowed out of a Whale's Vertebra from,	43
— View in Internal Area showing Partition Slabs,	35
— View of Entrance from Outside,	35
Broich, near Crieff, Cist at,	366
Bronze-Age Burial Site at Crieff,	365-369
Brooch from Ballinaby, Islay,	312
— from the Island of Barra,	309
— from Castletown, Caithness,	314
— from Pierowall, Orkney,	310
— from Viking Grave in Unst, Shetland,	300
— of Brass found on the Island of Raasay,	12
— of Copper, found at Walls, Orkney,	370
— Oval, of the Viking Time, Development and Chronology of the,	292-315
Brooches,	301-308
— from Uppland and the Island of Öland, Sweden,	301
— of Brass, from Oronsay,	12, 292
— Viking, from Reay, Caithness,	17
Buckle of Brass, from Reay, Caithness,	17
Buckles of Iron from Reay, Donation of,	14
Burial, Prehistoric at Alva, Clackmannanshire,	196-200
Burnside Mill, Forfar, Axe Hammer of Stone from,	16
Cadder, Lanarkshire, Mound at,	24
Cairn, Excavation of a, at Inverlael, Inverbroom, Ross-shire,	112-124
Cairn-na-Bhodaichd, Skye, Earth-House at,	200-205
Cairns, Two Bronze-Age, in the Parish of Foulden, Excavation of,	316-330
— at Foulden, Plans and Sections of,	318, 326
— at Parish of Foulden, showing Positions of,	317
Callander (J. Graham), Notices of a Short Cist discovered in the Parish of Yester, East Lothian; of a Prehistoric Burial at Alva, Clackmannanshire; and of an Earth-House in Skye,	194-205
Cannan (Miss), Donation of Greek Vase by,	336
Cannon Balls found at David's Tower, Edinburgh Castle,	250
Carmichael (Rev. D.), Donation of Iron Cross and Remains of Iron Buckles from Reay by,	14
Carn nan Bharrach, A Burial Mound of the Viking Time on the Island of Oronsay, Argyllshire,	272-291
— showing Position of,	274
— Sketch Plan of,	277
— List of Articles found at,	273

	PAGE
Carsphairn, Coins found on the Farm of Craigengillan,	398
Castle, Edinburgh, Account of the Recent Discovery of the Remains of David's Tower at,	230-270
——— Bird's-Eye View of, in 1573,	261
Castlecraig, Peeblesshire, Spearhead of Bronze from,	16
Castledykes, Kirkcudbright, Account of the Excavation of the Edwardian Castle at,	381-394
Castletown, Caithness, Brooch from,	314
Casts, from Fragments of Clay Moulds found at Mote of Mark, Rock- cliffe, Dalbeattie,	143, 146, 149
Chirnside, Discovery of a Cist at Edington Mill	330-333
Churches, Scottish, The Orientation of,	169-183
——— and Churchyard Memorials of St Helens on the Lea and Cook- burnspath,	210-229
Cist at Broich, near Crieff,	366
——— at Danes' Dyke, Craighead Farm, Crail,	11
——— at Edington Mill, Chirnside,	330-333
——— discovered in the Parish of Yester, East Lothian, Notice of,	194-196
Cists at Inverlael, Ross-shire,	115, 121
Cnoc Sligeach, Oransay, Shell Mound at,	52-108
Cockburnspath, Church and Churchyard Memorials of,	222-229
——— A Blacksmith's Memorial at,	228
——— A Representation of a Resurrection Angel at,	228
——— Arnot Arms at,	225
——— Hay of Errol Arms at,	226
——— The " Deid Bell " at,	224
——— West Gable and Tower of the Church of,	223
Coin found at the Mote of Hawick,	23
——— Spanish Silver,	17
Coins found at Ayr,	401
——— found on the Farm of Craigengillan, Parish of Carsphairn,	398
——— Notes of Three Hoards of, recently discovered in the South of Scotland,	395-402
——— Purchase of,	371
Comb, Small-toothed, of Bone, found at Castledykes,	393
Corrie (John M.), Notes on a Collection of Polishers and other Objects found on the Site of the Roman Fort at Newstead, Melrose,	338-343
——— Donation of Small Polisher from Newstead by,	12
Coupar-Angus Abbey, Silver Matrix of the Seal of,	16
Craigengillan, Coins found at,	398
Craighead Farm, Crail, Urn found at,	11
Crail, Urn found near,	11

	PAGE
Craw (J. Hewat), Excavation of Two Bronze-Age Cairns in the Parish of Foulden; and a Cist containing a Food-Vessel Urn, and Fragments of a Beaker, at Edington Mill, Chirnside,	316-333
Cree (James E.), Excavation of a Cairn at Inverlael, Inverbroom, Ross-shire, by,	112-124
Creswell (Clarendon Hyde), An Edinburgh Trade Dispute during the Commonwealth,	356-364
Crieff, The "Stayt" of—A Bronze-Age Burial Site,	365-369
Cross of Iron from Reay, Donation of,	14
Crucibles, Portions of, from Mote of Mark, Rockcliffe, Dalbeattie,	158
Cunningham, Tillicoultry, Urn found at,	337
Curle (Alex. O.), Director of the Museum, Account of some Excavations at the Mote of Hawick by,	18-24
——— Note on Pottery found at Hut-Circles, in the Parish of Muirkirk, Ayrshire,	379-381
——— Notes on the Relics found at the Edwardian Castle, Castledykes, Kirkcudbright, by,	390-394
——— Notices of the Discovery of a Hoard of Rapier-shaped Blades of Bronze at Drumcoltran, in the Stewartry of Kirkcudbright, and of a Viking Sword at Torbeckhill, near Ecclefechan, by,	333-335
——— Report on the Excavation of a Vitriified Fort at Rockcliffe, Dalbeattie, known as the Mote of Mark, by	125-168
——— (James), On Recent Scandinavian Grave-Finds from the Island of Oronsay, and from Reay, Caithness, with Notes on the Development and Chronology of the Oval Brooch of the Viking Time, by,	292-315
Danes' Dyke, Crail, Urn found at,	11
David's Tower at Edinburgh Castle, Account of the Recent Discovery of the Remains of,	230-270
——— Ancient Well near,	250-258
——— Canteen Coal-Cellar until 1912 at,	233
——— Door on South Side on Higher Level,	241
——— Doorway on North Side of Entrance Hall,	242
——— Half-Moon Battery with the Ancient Loop-Hole exposed,	246
——— Inner Side of Original Entrance to,	238
——— Key-Plan of the Castle, showing the Position of,	231
——— List of Articles found during Excavation of,	247-255
——— List of Articles found in the Well near,	258
——— Masons' Marks on Stonework,	244
——— New Steps for Access to the Vaults of,	264
——— North-East Angle of Palace at,	233
——— North-East Face of Battery Wall,	260
——— Original Entrance to Earliest Part of Tower,	237

	PAGE
David's Tower at Edinburgh Castle, Outer Face of Original Wall of, . . .	235
——— Outer Vault with Stalagmites at, . . .	240
——— Plan of, as it probably was originally, . . .	267
——— Plan of, with the Addition made later, . . .	268
——— Recess on Outer Face of Half-Moon Battery showing	
Original Loop-Hole, . . .	246
——— Recess on West Side of Hall, . . .	241
——— Steps near Site of "Constables' Tower," . . .	264
——— Tapered Loop-Hole of Battery, . . .	245
——— Vaulted Recess with Shot-Hole at, . . .	234, 244
——— View of the South and East Elevations of, . . .	269
——— View through Loop-Hole showing Alignment with High	
Street, . . .	245
Dawkins (Prof. W. Boyd). Notes on the Remains found at Skara in the	
Parish of Sandwick, Orkney, . . .	349-355
Deer-Horn Implements from Oransay Shell-Mound, . . .	94, 98
Dice of Bone and their Numbered Faces from Broch of Ayre, Orkney, . .	43
Discs from Borenish Fort, Loch Tummel, . . .	370
Dissent and Protest by Dr D. Hay Fleming, . . .	10, 431
Drumcoltran, Kirkcudbright, Rapier-shaped Blades of Bronze, found at, 12,	333-335
Duachy Standing Stones, . . .	403
Dunblane (Bishop of), Matrix of the Seal of, . . .	17
Dundargue Castle, Aberdeenshire, Notes on Excavations at, . . .	184-192
——— Fragments of Pottery from, . . .	190
——— Objects found at, . . .	189
——— Plan of, . . .	186
Dwellings, Ancient, Notes on a Further Excavation of, at Skara, in the	
Parish of Sandwick, Orkney, . . .	344-355
Earlston, Glass Beads from, . . .	16
Earthenware Vessels, Fragments of, found at David's Tower, Edin-	
burgh Castle, . . .	253, 254
Earth-House at Cairn-na-Bhodaebd, Skye, . . .	200-205
Edinburgh Castle, Account of the Recent Discovery of the Remains of	
David's Tower at, . . .	230-270
——— Bird's-Eye View of, in 1573, . . .	261
——— Views of, from the South-East and East, . . .	232
Edinburgh Trade Dispute during the Commonwealth, . . .	356-364
——— Trade Tokens, . . .	371
Edington Mill, Chirnside, Discovery of a Cist at, . . .	330-333
Edwardian Castle at Castledykes, Kirkcudbright, . . .	381-394
——— Ground Plan of, . . .	388
——— Notes on the Relics found at the, . . .	390-394

	PAGE
Eeles (F. C.), The Orientation of Scottish Churches, Illustrated by an Analysis of some Examples in Aberdeenshire and Banffshire, by, . . .	169-183
Egyptian Ushabti Figure, Donation of,	13
Fabricators from Wantonwalls, Lauder, and Kershough, Jedburgh, . . .	16
Fauldhouse, Linlithgowshire, Cork Penny from,	17
Fellows Deceased,	3
—— Election of, 2, 11, 109, 193, 270, 336, 370	
Fibula found at Newstead,	342
—— of Bronze, found near Peebles,	371
Finger Ring, from Whithorn,	16
Flagon, Fragments of, found at David's Tower, Edinburgh Castle, . . .	252
Fleming (Dr D. Hay), Dissent and Protest by,	10, 431
Flint Implements from Foulden, Berwickshire,	109, 324
—— from Harray, Orkney,	109-111
—— from Oransay Shell-Mound,	92
—— Knives from Birkenside, Earlston, and Whooplaw, Stow, . . .	16
—— from Bowerhouse, Lauder, and Clackmae,	16
Fort, Vitrified, at Rockcliffe, Dalbeattie, Excavation of,	125-168
Foulden, Excavation of Two Bronze-Age Cairns in the Parish of, . . .	316-330
—— Urns, Flint Knives, Scraper, and Perforated Axe Hammer from, .	109
Fraser (John), Donation of Flint Implements from Harray, Orkney, by, .	109-111
Fyvie, Aberdeenshire, Stone Ball, Stone Axes, Arrowheads of Flint, and Whorls from,	371
Garvock Churchyard, Note on Three Sculptured Monuments in,	206-209
Glass Armlet, Portion of, found at Newstead,	342
—— Bracelets, Fragments of,	16
—— Fragments from Mote of Mark, Rockcliffe, Dalbeattie,	153
Glasserton, Wigtownshire, Axe Hammer of Stone from,	16
—— Axe of Stone from,	16
Graeme (A. Sutherland), F.S.A. Scot., Account of the Excavation of the Broch of Ayre, St Mary's Holm, Orkney, by,	31-51
Grant (Dr J.), Donation of a Glass Bead, Copper Brooch, Segment of a Ring of Jet, and a Small Perforated Pebble, by,	370
Grave and Stone Circle at New Deer, Aberdeenshire,	191-192
Greek Vase, Donation of,	336
Grieve (Symington), Note upon Carn nan Bharraich, or Cairn of the Men of Barra, A Burial Mound of the Viking Time on the Island of Oronsay, Argyllshire,	272-291
Griffith (Major W. Meyer), Ruthven Barracks, in Badenoch, by, . . .	25-30

	PAGE
Hagg Wood, Foulden, Berwickshire, Urns, Flint Knives, Scraper, and Perforated Axe Hammer found in,	109
Halfpenny, Perth,	17
Hammer of Stone, Perforated, Fragment of, from Skerrabrae, Skall, Orkney,	271
Harpoons of Bone from Oransay Shell-Mound,	97
Harray, Orkney, Flint Implements from,	109-111
Hawick, Mote of, Account of some Excavations at the	18-24
Hay of Errol, Arms at Cockburnspath,	226
Headrick (Mungo), The "Stayt" of Crieff—A Bronze-Age Burial Site,	365-369
Helmet of Iron, found at David's Tower, Edinburgh Castle,	255
Hislop (R. Oliver), Donation of Silver Penny of Alexander III. by,	13
Horse's Bit of Iron, from Reay, Caithness,	17
Houston (James), Donation of Rapier-shaped Blade of Bronze by,	12
Hut-Circles, Excavation of Two, in the Parish of Muirkirk, Ayrshire,	373-381
——— Parish of Muirkirk, Pottery found in,	379-381
Hutton Trust, Donation of Pottery Moulds and other Relics found in the Mote of Mark, by,	193
Inverlael, Ross-shire, Excavation of a Cairn at,	112-124
——— Ground Plan of Cairn at,	114
——— The Central Cist at,	121
——— Objects found in the Cists at,	118
——— Part of the Retaining Wall at,	119
——— View of the Cairn at,	113
——— View of Cist at,	115
Iona, Island of, An Inventory of the Ancient Monuments remaining in the,	421-430
Islay, Brooches from Ballinaby,	312
Jar of Buff Ware found in Ayr,	371
Jug found on the Farm of Craigengillan, Parish of Carsphairn,	399
——— Section of, found at Balgreggan Quarry, Stoneykirk, Wigtownshire,	396
Kirkcudbright, Account of the Excavation of the Edwardian Castle at Castledykes,	381-394
Kirkcudbrightshire, Rapier Blade of Bronze from,	16
Knife Dagger, found at Castledykes,	394
Knife-like Object found at Newstead,	343
Knives of Flint, from Birkenside, Earliston, and Whooplaw, Stow,	16
——— from Bowerhouse, Lauder, and Clackmae,	16

	PAGE
Lagavulin Standing Stones,	404
Lamp of Pottery found at Mote of Mark, Rockcliffe, Dalbeattie,	161
—— of Stone, from Broch of Ayre, Orkney,	39
Lantern of Brass, Donation of,	13
Lewis, Muller of Stone from,	17
Lovel, Family of,	23
Luggate Burn, Haddingtonshire, Bottle of Glass from,	13
Lyle (James), Donation of Pottery Plaque by,	13
Macalister (R. A. S.), An Inventory of the Ancient Monuments remaining in the Island of Iona,	421-430
Macdonald (George), Notes on Three Hoards of Coins recently dis- covered in the South of Scotland, by,	395-402
Macgregor (Mrs Maxwell), Donation of Egyptian Ushabti Figure by,	13
Mackail (Hugh), Covenanting Martyr, Book bearing the Signature of,	193
M'Neill (Neil Ban), Donation of Brooches, Bronze Pin, Bone Object, and Iron Shears, by,	12, 292
Mann (Ludovic MacLellan), The Carved Stone Balls of Scotland: A New Theory as to their Use, by,	407-420
Masks on Fragments of Earthenware Pitchers, found at Castledykes,	393
Masons' Marks on Stonework of David's Tower, Edinburgh Castle,	244
Matrices of the Seals of Coupar-Angus Abbey, Bishop of Dunblane, and Trinity College Church, Edinburgh,	16, 17
Meat Jack from Orkney, Donation of,	13
Mellendean, Roxburghshire, Silver Pennies from,	17
Melrose, Polishers and other Objects found on the Site of the Roman Fort at Newstead,	338-343
Monuments, Ancient, Inventory of the, remaining in the Island of Iona,	421-430
—— Note on Three, in Garvock Churchyard, Kincardineshire,	206-209
Mote of Hawick, Account of some Excavations at the,	18-24
—— ——— Bone Needle from,	23
—— ——— Coin found at,	23
—— ——— Fragments of Pottery found at,	20-23
—— ——— Sections,	21
—— ——— Sections of Rims of Cooking Pots from,	22
—— ——— View from the South-South-East,	19
—— ——— View from South-West,	19
—— of Mark, Excavation of a Vitrified Fort at Rockcliffe, Dalbeattie, known as the,	125-168
—— ——— Elevation of Wall, showing Vitrification,	131
—— ——— Fragments of Glass from,	153
—— ——— Fragments of Clay Moulds and Casts from,	142-149
—— ——— View from the Shore of the Estuary,	125

	PAGE
Mote of Mark from the Landward Side,	126
— Pin-Head of Bone from,	162
— Plan and Sections of Summit of,	129
— Portion of Bowl-shaped Vessel from,	159
— Portions of Crucibles from,	158
— Pottery found at,	158-161
— Sectional Plans of Structures in,	135
— Sectional View of Rampart,	130
— View from the Mote, looking over the Estuary,	126
— View of Wall on North Side of,	134
— Vitrification, bearing Impression of Coarse Fabric,	133
— Vitrification on Detached Blocks at,	132
Mould of Stone for Casting a Bronze Axe, from Ross-shire,	13
— from Skara,	353
Moulds, Fragments of, from Mote of Mark, Rockcliffe, Dalbeattie,	142-149
Mounting of Bronze found at Newstead,	342
Muirkirk, Ayrshire, Excavation of Two Hut-Circles in the Parish of,	373-381
— Pottery found at,	379-381
Muller of Stone from Lewis,	17
Museum, proposed Sunday opening of,	9
— Dissent and Protest by Dr D. Hay Fleming against,	10, 431
Needle of Bone, from Mote of Hawick,	23
New Deer, Aberdeenshire, Stone Circle and Grave at,	191-192
Newstead, Polishers found on the Site of the Roman Fort at,	338-343
— Small Stone Polisher from,	12
Office-Bearers, Election of,	1
Óland, Island of, Brooches from,	301
Oldrieve (W. T.), Account of the Recent Discovery of the Remains of David's Tower at Edinburgh Castle, by,	230-270
Oransay Shell-Mound, Excavation of an,	52-108
— Animal Remains found at,	105-107
— Cnoc Sligeach, Plan and Contours,	57
— Configuration of Cnoc Sligeach on the North,	62
— Implements of Stone and Harpoons of Bone from,	91-99
— Plan and Section of Excavation at,	63
— Plan and Sections of Excavations through Shell-Bed,	65
— Portion of Beach at North End of Trench,	67
— Raised Beach and Mound to the West of Cnoc Sligeach,	59
— Section of Trench showing Beach overlying Rock,	66
— Sections of Cuttings,	84

	PAGE
Oransay Shell-Mound, Sections of Sand-Dunes on Beach,	89
— Shells, Perforated, from,	100-103
— Shingle resting on Shell-Layer,	70
— Showing Position of Cnoc Sligeach and the Coast-Line,	59
from E. by S.,	60
— Showing Position of the E.S.E. Occupation,	60
— Showing the Higher Ground to the West of Cnoc Sligeach,	75
— Typical Section 53 Feet from Centre of Hill,	62
— View from W.N.W., showing Sand-Dunes at East End of Island,	81
— View of a Section of Post-Hole No. 2 in the Shell Refuse,	73
— View of Centre of Trench showing Sand resting on Rock,	80
— View of Cross-Section 53 Feet from Centre of Hill,	83
— View of Post-Hole No. 4,	72
— View of Section of Beach showing Old Land Surface,	82
— View of Section of Post-Hole No. 3,	88
— View of Shell-Mound on Top of the Hill,	71
— View of Shingly Top of Beach,	87
— View of Stones and Shell Refuse,	69
— View of Top of Beach when cleared of Overlying Shell-Layer,	86
— View of Trench,	74
— View of Trench showing Rock in Bottom,	76
— View of Trench showing Slope of Shell-Layer,	78
— View showing Converging of Shell Refuse,	77
— View showing Embedded Stones,	90
— View showing the Shore Dunes,	31-51
Orkney, Account of the Excavation of the Broch of Ayre, St Mary's Holm,	370
— Bead found at Sandwick,	310
— Brooch from Pierowall,	370
— Brooch of Copper found at Walls,	13
— Donation of Meat Jack from,	109-111
— Flint Implements from Harray,	344-355
— Notes on a Further Excavation of Ancient Dwellings at Skara in the Parish of Sandwick,	370
— Perforated Pebble from Stennis,	370
— Segment of a Ring of Jet, found at Walls,	345
— Sketch Ground-Plan of Part of the Ancient Dwelling at Skara,	270
— Stone and Bone Implements from Skerrabrae, Skall,	292-315
Oransay, On Recent Scandinavian Grave-Finds from,	12, 292
— Donation of Objects from Viking Burial at,	272-291
— Island of, Burial Mound of the Viking Time on the,	371
Oxnam, Roxburghshire, Arrowhead of Flint from,	

	PAGE
Patullo (Rev. J.), Donation of Whorl and Fragment of Tile by,	12
Peacock (A. Webster), Donation of Highland Broadsword and Scabbard by,	109
Peebles, Fibula of Bronze found near,	371
Pennies, Silver, from Mellendean, Roxburghshire,	17
Penny, Edward I. or II., from Fauldhouse, Linlithgowshire,	17
— of Silver from Mellendean Hoard,	13
Perforated Pebble from Stennis, Orkney,	370
Perth Halfpenny,	17
Pick of Iron, found at Castledykes,	394
Pieces for a Game, found at Newstead,	341
Pierowall, Orkney, Brooch from,	310
Pin of Brass from Reay, Caithness,	17
— of Bronze, from Oransay,	12, 292
Pin-Head of Bone, from Mote of Mark, Rockcliffe, Dalbeattie,	162
Pins of Bone, and Fragments from Broch of Ayre, Orkney,	44
— and Borers of Bone from Shell-Mound, Oransay,	99
— of Bronze from Broch of Ayre, Orkney,	45
Pitchers, Earthenware, Fragments with Masks found at Castledykes,	393
Plaque of Pottery, Donation of,	13
Polisher of Stone from Newstead,	12
Polishers and other Objects found on the Site of the Roman Fort at Newstead, Melrose,	338-343
Pottery found at Hut-Circles, Parish of Muirkirk, Ayrshire,	379-381
— found at Mote of Mark, Rockcliffe, Dalbeattie,	158-161
— found in Earth-House at Cairn-na-Bhodachd, Skye,	203-204
— Fragment of, with Brooch in relief, found at Castledykes,	392
— Fragments found at Mote of Hawick,	20-23
— from Broch of Ayre, Orkney,	45-48
— from Dandargue Castle,	190
— from Mound at Cadder, Lanarkshire,	24
Pump, Triple-Cylinder, found at Well, David's Tower, Edinburgh Castle,	259
Ransay, Island of, Brooch of Brass found at,	12
Ramsay (Col. Wardlaw), Urn from Cuninghar, Tillicoultry, Exhibited by,	337
Rapier-Blade of Bronze, found at Drumcoltran,	12
— from Kirkcudbrightshire,	16
Rapier-shaped Blades of Bronze found at Drumcoltran, Kirkcudbright,	333-335
Reay, Caithness, Viking Brooches, Pin of Brass, Buckle, Whorl, and Horse Bit from,	17
— On Recent Scandinavian Grave-Finds from,	292-315
— Cross and Buckles of Iron found at,	14

	PAGE
Reid (Alan), The Churches and Churchyard Memorials of St Helens on the Lea and Cockburnspath, by,	210-220
Ring of Bone, from Whithorn,	16
——— of Jet, Segment of, found at Walls, Orkney,	370
Robison (J.), Account of the Excavation of the Edwardian Castle at Castledykes, Kirkeudbright, by,	381-394
Rockcliffe, Dalbeattie, Excavation of a Vitrified Fort at,	125-168
Roman Coins, found at Balgreggan Quarry, Stoneykirk, Wigtownshire,	395
——— Fort, Newstead, Melrose, Polishers and other Objects found on the Site of the,	338-343
Ross-shire, Mould of Stone for Flat Bronze Axe from,	13
Rune cut on Stone at Skara,	347
Ruthven Barracks, in Badenoch,	25-30
——— ——— Ground Plan of,	26
——— ——— View of, in 1745,	27
——— ——— View of, from the East, 1913,	29
St Helens on the Lea, Church and Churchyard Memorials of,	210-222
——— A Medieval Cross-Slab at,	216
——— Base Mouldings of Chancel Arch at,	213
——— Portion of a Hog-backed Grave-Cover at,	219
——— Southern and Northern Splays of a Sculptured Coped Grave-Cover	217
——— The Arched Recesses at,	215
——— The Church from the South-East,	212
St Martin's, Perthshire, Bronze Axe found on the Farm of South Friarton,	371
Samian Ware with Potter's Mark found at Newstead,	341
Sandwick, Notes on a Further Excavation of Ancient Dwellings at Skara,	344-355
Saw, Stone, from Skerrabrae, Skail, Orkney,	271, 351
Scandinavian Grave-Finds from the Island of Oronsay and from Reay,	292-315
Scottish Churches, The Orientation of,	169-183
Scrapers of Flint found at Newstead,	343
Sculptured Stones at St Helens,	216-221
Shafts, Stone, Fragments of, found at David's Tower, Edinburgh Castle,	250
Shears of Iron, from Oronsay,	12, 292
Shell, Fragments of Explosive, found at David's Tower, Edinburgh Castle,	250
Shell-Mound at Oronsay, Excavation of,	52-108
Shells, Perforated, from Shell-Mound, Oronsay,	100-103
Shennan (Sheriff), Notes on Certain Standing Stones in Argyllshire,	403-407
Shetland, Brooch from Viking Grave in Unst,	300
Silver Penny of Alexander III. from Mellendean Hoard,	13
Sinker of Stone found at Newstead,	343
Skail, Orkney, Stone and Bone Implements from Skerrabrae,	270

	PAGE
Skara, Ancient Dwellings at, Notes on a Further Excavation of, . . .	344-355
Skerrabrae, Stone and Bone Implements from, . . .	270
Skye, Earth-House at Cairn-na-Bhodachd, . . .	200-205
Spanish Silver Coin, . . .	17
Spear-Head of Bronze from Castlecraig, Peeblesshire, . . .	16
Standing Stones in Argyllshire, . . .	403-407
Stewart (W. Balfour), Notes on a Further Excavation of Ancient Dwellings at Skara, in the Parish of Sandwick, Orkney, by, . . .	344-355
— — — — — Donation of Articles from Skerrabrae, Skail, Orkney, by, . . .	270
— — — — — Donation of Meat Jack from Orkney by, . . .	13
Stone Balls, Carved, A New Theory as to their Use, . . .	407-420
— — — Circle and Grave at New Deer, Aberdeenshire, . . .	191-192
— — — Fragments of Moulded, found at David's Tower, Edinburgh Castle, . . .	255
— — — Implements from Oransay Shell-Mound, . . .	92-96
— — — Rybate, Moulded, found at David's Tower, Edinburgh Castle, . . .	255
Stones, Standing, in Argyllshire, . . .	403-407
Stoneykirk, Wigtownshire, Roman Coins found at, . . .	395
Sweden, Brooches from, . . .	301-308
Sword, Viking, found at Torbeckhill, near Ecclefechan, . . .	13, 335
Tait (David), Donation of a Brooch of Brass by, . . .	12
Tile, Donation of Fragment of, . . .	12
Tillicoultry, Urn found at the Cuninghar, . . .	337
Tobacco Pipes, found at David's Tower, Edinburgh Castle, . . .	251
Tokens, Trade, . . .	17, 371
Torbeckhill, Double-edged Sword of Viking Type found at, . . .	13, 335
Tower, David's, at Edinburgh Castle, . . .	230-270
Trade Dispute, Edinburgh, during the Commonwealth, . . .	356-364
— — — Tokens, . . .	17, 371
Trinity College Church, Edinburgh, Matrix of the Seal of, . . .	17
Tummel, Loch, Implements of Bone, Two Discs, and a Whorl, from Bore-nish Fort, . . .	370
Unst, Shetland, Brooch from Viking Grave in, . . .	300
Uppland, Sweden, Brooches from, . . .	301
Urn found in a Cist at Broich, near Crieff, . . .	365
— — — found at the Cuninghar, Tillicoultry, . . .	337
— — — found at Danes' Dyke, Craighead Farm, Crail, . . .	11
— — — from the Edington Mill Cist, Chirnside, . . .	331
Urns from Cairns at Fouliden, . . .	109, 324, 322

	PAGE
Vase (Greek), Donation of,	336
Viking Brooches found in Sweden,	301-308
— from Reay, Caithness,	17
— Burial at Oronsay, Donation of Objects from,	12, 292
— Grave in Unst, Shetland,	300
— Sword, found at Torbeckhill near Ecclefechan,	335
Weight found at Newstead,	342
Well, near David's Tower, Edinburgh Castle,	256-258
— — — List of Articles found in,	258
— — — Triple-Cylinder Pump found at Bottom of,	259
— — — View showing Well-Head to Ancient Well,	259
Western Isles, Political History of, during the latter half of the Ninth Century,	279-291
Whetstones found at Newstead,	342
Whithorn, Finger Ring of Bone from,	16
Whorl from Borenish Fort, Loch Tummel,	370
— Donation of,	12
— Stone, from Reay, Caithness,	17
Whorls, from Broch of Ayre, Orkney,	39
— from Fyvie, Aberdeenshire,	371
Wilkie-Dalyell (Major), Donation of Urns, Flint Knives, Scraper, and Perforated Axe Hammer, by,	109
Wine Flagon, Fragments of, found at David's Tower, Edinburgh Castle,	252
Yester, East Lothian, Notice of a Cist discovered in,	194-196





28

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